

SERVICE MANUAL

FE-2 CHASSIS

MODEL	COMMANDER	DEST	CHASSIS NO.	MODEL	COMMANDER	DEST	CHASSIS NO.
KV-29CL10B	RM-946	FR	SCC-Q54Q-A	KV-29CL10K	RM-946	OIRT	SCC-Q51P-A
KV-29CL10E	RM-946	ESP	SCC-Q53R-A	KV-29CL10U	RM-946	UK	SCC-Q52N-A

FD Trinitron



KV-29CL10



RM-946

TRINITRON[®] COLOR TV
SONY[®]

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CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR THE CARBON PAINTED ON THE CRT, AFTER REMOVAL OF THE ANODE CAP.

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE WORK TO AVOID POSSIBLE SHOCK HAZARD DUE TO LIVE CHASSIS, THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE POWER LINE.

SAFETY-RELATED COMPONENT WARNING !!

COMPONENTS IDENTIFIED BY SHADING AND MARKED Δ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION !!

AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENTION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

ATTENTION AUX COMPOSANTS RELATIFS À LA SECURITÉ!!


LES COMPOSANTS IDENTIFIÉS PAR UNE TRAME ET PAR UNE MARQUE Δ SUR LES SCHÉMAS DE PRINCIPE, LES VUES EXPLOSÉES ET LES LISTES DE PIÉCES SONT D'UNE IMPORTANCE CRITIQUE POUR LA SÉCURITÉ DU FONCTIONNEMENT, NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

ITEM MODEL	Television System	Stereo System	Channel Coverage	Color System
B	B/G/H, D/K, I, L	GERMAN/NICAM Stereo	VHF : E02-E12, F02-F10, UHF : E21-E69, F21-F69, B21-B69 CABLE TV : S01-S03, S1-S20, B-Q HYPER : S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
E	B/G/H	GERMAN/NICAM Stereo	VHF : E02-E12 UHF : E21-E69 CABLE TV : S01-S03, S1-S20 HYPER : S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
K	B/G/H, D/K	GERMAN/NICAM Stereo	VHF : E02-E12, R01-R12 UHF : E21-E69, R21-R69 CABLE TV : S01-S03, S1-S20 HYPER : S21-S41	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)
U	I	NICAM Stereo	UHF : B21-B69	PAL, SECAM NTSC4.43, NTSC3.58 (VIDEO IN)

Picture Tube	Flat Display FD Trinitron Approx 72cm (29 inches) (Approx 68cm picture measured diagonally).	Sound output	
		Right and Left speaker	2x10W (Music Power) 2x5W (RMS)
Input/Output Terminals [REAR]		General Specifications	
1: 21-pin Euro connector (CENELEC standard)	Inputs for Audio and Video signals. Inputs for RGB. Outputs of TV Video and Audio signals.	Power Requirements	220 - 240V
		Power Consumption	94W
2: 21-pin Euro connector	Inputs for Audio and Video signals. Inputs for S-Video. Outputs of TV Video and Audio signals.(Selectable).Smartlink interface.	Dimensions	Approx 788 x 598 x 523mm
		Weight	Approx 45.8kg
		Supplied Accessories	RM-946 Remote Commander (1) IEC designated R6 battery (2)
		Other Features	Auto Noise Reduction, DQP & DF, Teletext,Smartlink.
Input/Output Terminals [FRONT]		Remote Control System : Infrared Control	
Headphone jack	stereo mini jack	Power requirements	3V dc 2 batteries IEC designation R6 (size AA)
Audio inputs	phono jacks		
Video inputs	phono jack		
Design and specifications are subject to change without notice.			

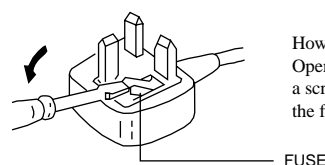
Model Name Item	KV-29CL10B	KV-29CL10E	KV-29CL10K	KV-29CL10U
PAP	OFF	OFF	OFF	OFF
PIP	OFF	OFF	OFF	OFF
RGB Priority	ON	ON	ON	ON
Woofer Box	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON
Scart 2	ON	ON	ON	ON
Front in (3)	ON	ON	ON	ON
Scart 4	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF
Norm B/G	ON	ON	ON	OFF
Norm I	ON	OFF	OFF	ON
Norm D/K	ON	OFF	ON	OFF
Norm AUS	OFF	OFF	OFF	OFF
Norm L	ON	OFF	OFF	OFF
Norm SAT	OFF	OFF	OFF	OFF
Norm M	OFF	OFF	OFF	OFF
Teletext	ON	ON	ON	ON
Nicam Stereo	ON	ON	ON	ON

WARNING (UK Models only)

The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** rating. Should the fuse need to be replaced, use a **5AMP FUSE** approved by ASTA to **BS 1362**, ie one that carries the  mark.

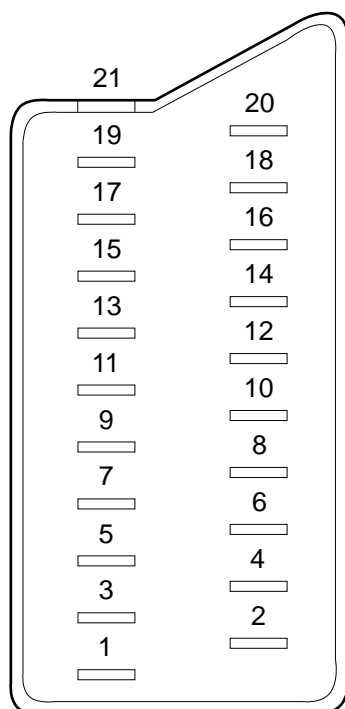
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR THE OUTLET SOCKETS IN YOUR HOME, IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED. THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET.

When an alternative type of plug is used, it should be fitted with a **5 AMP FUSE**, otherwise the circuit should be protected by a **5AMP FUSE** at the distribution board.



How to replace the fuse.
Open the fuse compartment with a screwdriver blade and replace the fuse.

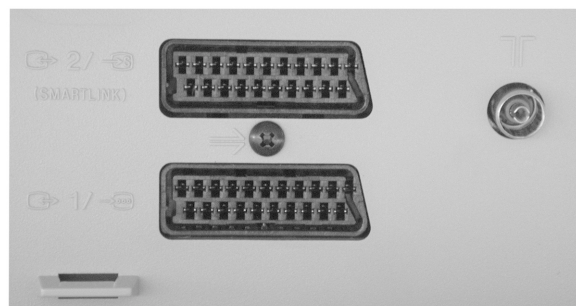
21 pin connector



Pin No	1	2	4	Signal	Signal level
1	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedance : Less than 1kohm*
2	○	○	○	Audio output B (right)	Standard level : 0.5V rms Output impedance : More than 10kohm*
3	○	○	○	Audio output A (left)	Standard level : 0.5V rms Output impedance : Less than 1kohm*
4	○	○	○	Ground (audio)	
5	○	○	○	Ground (blue)	
6	○	○	○	Audio input A (left)	Standard level : 0.5V rms Output impedance : More than 10kohm*
7	○	●	●	Blue input	0.7 +/- 3dB, 75 ohms positive
8	○	○	○	Function select (AV control)	High state (9.5-12V) : Part mode Low state (0-2V) : TV mode Input impedance : More than 10K ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (green)	
10	○	○	○	Open	
11	○	●	●	Green	Green signal : 0.7 +/- 3dB, 75 ohms, positive
12	○	○	○	Open	
13	○	○	○	Ground (red)	
14	○	○	○	Ground (blanking)	
15	○	-	-	Red input	0.7 +/- 3dB, 75 ohms, positive
	-	○	○	(S signal Chroma input)	0.3 +/- 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1-3V) Low state (0-0.4V) Input impedance : 75 ohms
17	○	○	○	Ground (video output)	
18	○	○	○	Ground (video input)	
19	○	○	○	Video output	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
20	○	-	-	Video input	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
	-	○	○	Video input Y (S signal)	1V +/- 3dB, 75ohms, positive sync 0.3V (-3+10dB)
21	○	○	○	Common ground (plug, shield)	

○ Connected ● Not Connected (open) * at 20Hz - 20kHz

Rear Connection Panel



Front Connection Panel



FE-2 SELF DIAGNOSTIC SOFTWARE

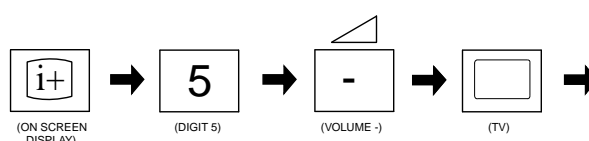
The identification of errors within the FE-2 chassis is triggered in one of two ways :- 1: Busy or 2: Device failure to respond to IIC. In the event of one of these situations arising the software will first try to release the bus if busy (Failure to do so will report with a continuous flashing LED) and then communicate with each device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED (Series of flashes which must be counted) See table 1., non fatal errors are reported using this method. Each time the software detects an error it is stored within the NVM. See Table 2.

Table 1

Error Message	LED Code
No error	00
Reserved	01
OCP (Over Current Protection)	02
Not Used	03
No Vertical Sync	04
IKR Error at power on	05
IIC bus clock and/or data lines low at power on	06
NVM no IIC bus acknowledge at power on	07
Not Used	08
Tuner no acknowledge at power on	09
Sound Processor Error	10
Jungle controller 8 volts error	11

How to enter into Table 2

1. Turn on the main power switch of the TV set and enter into the 'Stanby Mode'.
2. Press the following sequence of buttons on the Remote Commander.



3. The following table will be displayed indicating the error count.

Flash Timing Example : e.g. error number 3

StBy LED

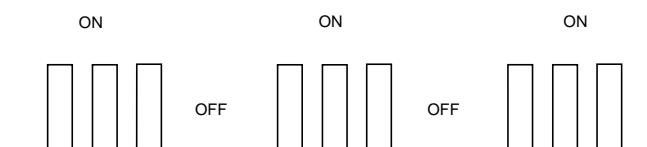




Table 2


ERROR MENU			
E02	OCP	(0, 255)	0
E03	OVP N/A	(0, 255)	0
E04	VSUNC	(0, 255)	0
E05	IKR	(0, 255)	0
E06	IIC	(0, 255)	0
E07	NVM	(0, 255)	0
E08	JUNGLE	(0, 255)	0
E09	TUNER	(0, 255)	0
E10	SOUNDP	(0, 255)	0
E11	8V	(0, 255)	0
WORKING TIME			
HOURS			2
MINUTES			11

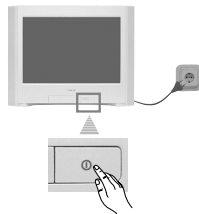
Note: To clear the error count data press '80' on the Remote commander.



The operating instructions mentioned here are partial abstracts from the 'Operating Instruction Manual'. The page numbers of the 'Operating Instruction Manual' remain as in the manual.

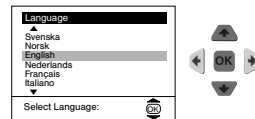
Switching On the TV and Automatically Tuning



- 1** The first time you switch on your TV, a sequence of menu screens appear on the TV enabling you to: 1) choose the language of the menu screen, 2) choose the country in which you wish to operate the TV, 3) adjust the picture slant 4) search and store all available channels (TV Broadcast) and 5) change the order in which the channels (TV Broadcast) appear on the screen.
- However, if you need to change any of these settings at a later date, you can do that by selecting the appropriate option in the  (Set Up menu) or by pressing the Auto Start Up Button  on the TV set.

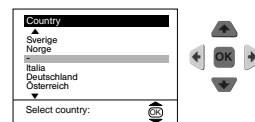
- 1** Connect the TV plug to the mains socket (220-240V AC, 50Hz).
Press the  on/off button on the TV set to turn on the TV. The first time you press this button, a **Language** menu displays automatically on the TV screen.



- 2** Press the  or  button on the remote control to select the language, then press the **OK** button to confirm your selection. From now on all the menus will appear in the selected language.

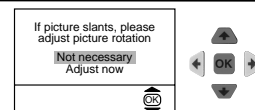








- 3** The **Country** menu appears automatically on the TV screen. Press the  or  button to select the country in which you will operate the TV set, then press the **OK** button to confirm your selection.



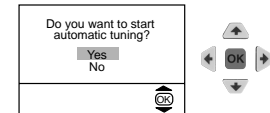
- i**
- If the country in which you want to use the TV set does not appear in the list, select “-” instead of a country.
 - To avoid wrong teletext characters for cyrillic languages we recommend selecting Russia country if your own country does not appear in the list.

- 4** Because of the earth's magnetism, the picture might slant. The **Picture Rotation** menu allows you to correct the picture slants if it is necessary.

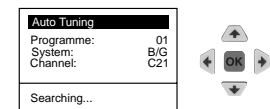


- a)** If it is not necessary, press  or  to select **Not necessary** and press **OK**.
- b)** If it is necessary, press  or  to select **Adjust now**, then press **OK** and correct any slant of the picture between -5 and +5 by pressing  or . Finally press **OK** to store.

- 5** The Auto Tuning menu appears on the screen. Press the **OK** button to select **Yes**.

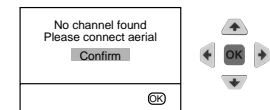


- 6** The TV starts to automatically search and store all available broadcast channels for you.

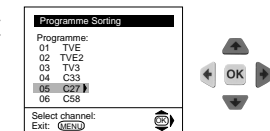


- ⚠** This procedure could take some minutes. Please be patient and do not press any buttons, otherwise the automatic tuning will not be completed.

- ⚠** If no channels were found during the auto tuning process then a new menu appears automatically on the screen asking you to connect the aerial. Please connect the aerial (see page 7) and press **OK**. The auto tuning process will start again.









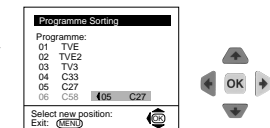
- 7** **i** After all available channels are captioned and stored, the **Programme Sorting** menu appears automatically on the screen enabling you to change the order in which the channels appear on the screen.



- a)** If you wish to keep the broadcast channels in the tuned order, go to step 8.


- b)** If you wish to store the channels in a different order:

- 1 Press the  or  button to select the programme number with the channel (TV Broadcast) you wish to rearrange, then press the  button.
- 2 Press the  or  button to select the new programme number position for your selected channel (TV Broadcast), then press .
- 3 Repeat steps b)1 and b)2 if you wish to change the order of the other channels.



- 8** Press the **MENU** button to remove the menu from the screen.





 Your TV is now ready for use


Introducing and Using the Menu System

i Your TV uses an on-screen menu system to guide you through the operations. Use the following buttons on the Remote Control to operate the menu system:

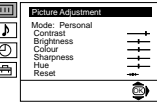
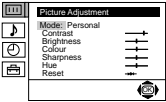
- 1 Press the **MENU** button to switch the first level menu on.

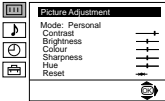
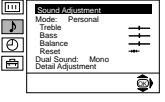

- 2 • To highlight the desired menu or option, press **▼** or **▲**.
• To enter to the selected menu or option, press **▶**.
• To return to the last menu or option, press **◀**.
• To alter settings of your selected option, press **▼/▲/◀/▶** or **▶**.
• To confirm and store your selection, press **OK**.


- 3 Press the **MENU** button to remove the menu from the screen.

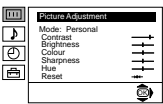
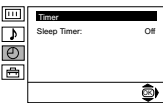


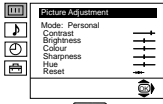

Menu Guide

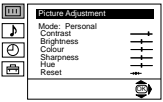

Level 1	Level 2	Level 3 / Function
		PICTURE ADJUSTMENT The “Picture Adjustment” menu allows you to alter the picture adjustments. To do this: after selecting the item you want to alter press ▶ , then press ▼/▲/◀/▶ or ▶ repeatedly to adjust it and finally press OK to store the new adjustment. i • This menu also allows you to customise the picture mode based on the programme you are watching: Mode ▶ ▼ Personal (for individual settings). ▶ Live (for live broadcast programmes, DVD and Digital Set Top Box receivers). ▶ Movie (for films). • Brightness, Colour and Sharpness can only be altered if “Personal” mode is selected. • Hue is only available for NTSC colour signal (e.g. USA video tapes). • Select Reset and press OK to reset the picture to the factory preset levels.

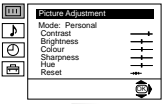

Level 1	Level 2	Level 3 / Function
		SOUND ADJUSTMENT The “Sound Adjustment” menu allows you to alter the sound adjustments. To do this: after selecting the item you want to alter, press ▶ , then press ▼/▲/◀/▶ or ▶ repeatedly to adjust it and finally press OK to store the new adjustment. This menu also contains two submenus as following: Mode ▶ ▼ Personal (for individual settings) ▶ Rock ▶ Pop ▶ Jazz Detail Adjustment ▶ ▼ Sound Effect: ▶ ▼ Off: Normal. ▶ Spatial: Acoustic sound effect. ▶ Auto volume: ▶ ▼ Off: Volume level changes according to the broadcast signal. ▶ On: Volume level of the channels will stay the same, independent of the broadcast signal (e.g. in the case of advertisements). ▶ TV Speakers: ▶ ▼ Off: Sound from external amplifier connected to the audio outputs on the rear of the TV set. ▶ On: Sound from the TV set. i • Treble and Bass can only be altered if “Personal” mode is selected. • Select Reset and press OK to reset the sound to the factory preset levels. • In case of a bilingual broadcast select Dual Sound and set A for sound channel 1, B for sound channel 2 or Mono for mono channel if available. For a stereo broadcast you can choose Stereo or Mono .

continued...

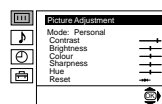
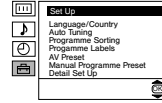
Level 1	Level 2	Level 3 / Function
		<p>SLEEP TIMER</p> <p>The "Sleep Timer" option in the "Timer" menu allows you to select a time period for the TV to switch itself automatically into the standby mode.</p> <p>To do this: after selecting the option press ▶, then press ▼ or ▲ to set the time period delay (max. of 4 hours) and finally press OK to store.</p>
<p>! • While watching the TV, you can press the ⏸ button on the remote control to display the time remaining.</p> <p>• One minute before the TV switches itself into standby mode, the time remaining is displayed on the TV screen automatically.</p>		

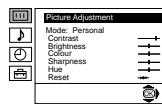
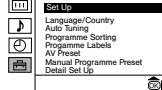
Level 1	Level 2	Level 3 / Function
		<p>LANGUAGE / COUNTRY</p> <p>The "Language/Country" option in the "Set Up" menu allows you to select the language that the menus are displayed in. It also allows you to select the country in which you wish to operate the TV set.</p> <p>To do this: after selecting the option, press ▶ and then proceed in the same way as in the steps 2 and 3 of the section "Switching On the TV and Automatically Tuning".</p>

Level 1	Level 2	Level 3 / Function
		<p>AUTO TUNING</p> <p>The "Auto Tuning" option in the "Set Up" menu allows you to automatically search for and store all available TV channels.</p> <p>To do this: after selecting the option, press ▶ and then proceed in the same way as in TV steps 5 and 6 of the section "Switching On the TV and Automatically Tuning" on page 8.</p>

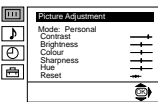
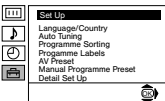
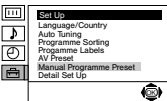

Level 1	Level 2	Level 3 / Function
		<p>PROGRAMME SORTING</p> <p>The "Programme Sorting" option in the "Set Up" menu allows you to change the order in which the channels (TV Broadcast) appear on the screen.</p> <p>To do this: after selecting the option, press ▶ and then proceed in the same way as in step 7 b) of the section "Switching On the TV and Automatically Tuning" on page 8.</p>

continued...

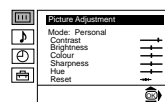
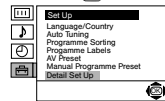
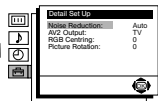
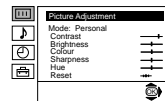
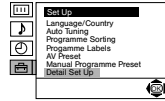
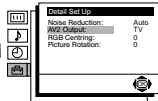



Level 1	Level 2	Level 3 / Function
		<p>PROGRAMME LABELS</p> <p>The "Programme Labels" option in the "Set Up" menu allows you to name a channel using up to five characters (letters or numbers).</p> <p>To do this:</p> <ol style="list-style-type: none"> 1 After selecting the option, press ▶, then press ▼ or ▲ to select the programme number with the channel you wish to name. 2 Press ▶. With the first element of the Label column highlighted, press ▼ or ▲ to select a letter or number (select "-" for a blank), then press ▶ to confirm this character. Select the other four characters in the same way. Finally press OK to store.

Level 1	Level 2	Level 3 / Function
		<p>AV PRESET</p> <p>The "AV Preset" option in the "Set Up" menu allows you to designate a name to the external equipment you have connected to the sockets of this TV.</p> <p>To do this:</p> <ol style="list-style-type: none"> 1 After selecting the option, press ▶, then press ▼ or ▲ to select the input source you wish to name (AV1 and AV2 are for the rear Scarts and AV3 for front connectors). Then press ▶. 2 In the label column automatically appears a label: <ol style="list-style-type: none"> a) If you want to use one of the 6 predefined label (CABLE, GAME, CAM, DVD, VIDEO or SAT), press ▼ or ▲ to select the desired label and finally press OK to store. b) If you want to set a different label, select Edit and press ▶. Then with the first element highlighted, press ▼ or ▲ to select a letter, number or "-" for a blank, then press ▶ to confirm this character. Select the other four characters in the same way and finally press OK to store.

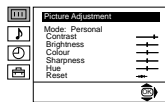
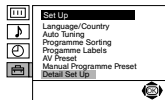
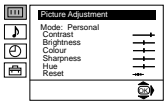
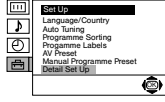
continued...

Level 1	Level 2	Level 3 / Function
 		MANUAL PROGRAMME PRESET The "Manual Programme Preset" option in the "Set Up" menu allows you to:
<p>a) Preset channels or a video input source one by one to the programme order of your choice.</p> <p>To do this:</p> <ol style="list-style-type: none"> After selecting the "Manual Programme Preset" option, press ▶ then with Programme option highlighted press ▶. Press ▼ or ▲ to select on which programme number you want to preset the channel (for VCR, select programme number "0"). Then press ◀.  The following option is only available depending on the country you have selected in the "Language/Country" menu. After selecting the System option, press ▶. Then press ▼ or ▲ to select the TV Broadcast system (B/G for western European countries or D/K for eastern European countries). Then press ◀. After selecting the Channel option, press ▶. Then press ▼ or ▲ to select the channel tuning ("C" for terrestrial channels or "S" for cable channels). Next press ▶. After that, press the number buttons to enter directly the channel number of the TV Broadcast or the channel of the VCR signal. If you do not know the channel number, press ▼ or ▲ to search for it. When you have tuned the desired channel, press OK twice to store. <i>Repeat all the above steps to tune and store more channels.</i> <p>b) Label a channel using up to five characters.</p> <p>To do this: Highlighting the Programme option, press the PROGR +/- button to select the programme number with the channel you wish to name. When the programme you want to name appears on the screen, select the Label option and press ▶. Next press ▼ or ▲ to select a letter, number or "-" for a blank. Press ▶ to confirm this character. Select the other four characters in the same way. After selecting all the characters, press OK twice to store.</p> <p>c) Normally the automatic fine tuning (AFT) is operating, however you can manually fine tune the TV to obtain a better picture reception in the case that the picture is distorted.</p> <p>To do this: while watching the channel (TV Broadcast) you wish to fine tune, select the AFT option and press ▶. Next press ▼ or ▲ to adjust the fine tuning between -15 and +15. Finally press OK twice to store.</p> <p>d) Skip any unwanted programme numbers when they are selected with the PROGR +/- buttons.</p> <p>To do this: Highlighting the Programme option, press the PROGR +/- button to select the programme number you want to skip. When the programme you want to skip appears on the screen, select the Skip option and press ▶. Next press ▼ or ▲ to select Yes. Finally press OK twice to confirm and store. <i>To cancel this function afterwards, select "No" instead of "Yes" in the step above.</i></p> <p>e) View and record correctly scrambled channels when using a decoder connected directly to the Scart ↔2/↔S or through a VCR. This option is only available depending on the country you have selected in the "Language/</p>		

To cancel this function afterwards, select "Off" instead of "On" in the step above.

Level 1	Level 2	Level 3 / Function
 		NOISE REDUCTION The "Noise Reduction" option in the "Detail Set Up" menu allows you to automatically reduce the picture noise visible in the broadcast signal.
<p>To do this: after selecting the option, press ▶. Then press ▼ or ▲ to select Auto. Finally press OK to confirm and store.</p> <p><i>To cancel this function afterwards, select "Off" instead of "Auto" in the step above.</i></p>		
 		AV2 OUTPUT The "AV2 Output" option in the "Detail Set Up" menu allows you to select the source to be output from the Scart connector ↔2/↔S in order you can record from this Scart any signal coming from the TV or from external equipment connected to the Scart connector ↔1/↔A or front connectors ↔3 and ↔3 .
<p> If your VCR supports SmartLink, this procedure is not necessary.</p> <p>To do this: after selecting the option, press ▶. Then press ▼ or ▲ to select the desired output signal: TV, AV1, AV3 or AUTO.</p> <p> If you select "AUTO", the output signal will always be the same one that is displayed on the screen.</p> <p> If you have connected a decoder to the Scart ↔2/↔S or to a VCR connected to this Scart, please remember to change back the "AV2 Output" to "AUTO" or "TV" for correct unscrambling.</p>		

continued...

Level 1	Level 2	Level 3 / Function
		RGB CENTRING When connecting an RGB source, such as a “PlayStation”, you may need to readjust the horizontal position of the picture. In that case, you can readjust it through the “RGB Centring” option in the “Detail Set Up”.
		To do this: while watching an RGB source select the “RGB Centring” option and press ➡ . Then press ⬇ or ⬆ to adjust the centre of the picture between -10 and +10. Finally press OK to confirm and store.
		PICTURE ROTATION Because of the earth’s magnetism, the picture may slant. In this case, you can correct the picture slant by using the option “Picture Rotation” in the “Detail Set Up” menu.
		To do this: after selecting the option, press ➡ . Then press ⬇ or ⬆ to correct any slant of the picture between -5 and +5 and finally press OK to store.

Teletext

i Teletext is an information service transmitted by most TV stations. The index page of the teletext service (usually page 100) gives you information on how to use the service. To operate teletext, use the remote control buttons as indicated below.

A Make sure to use a channel (TV Broadcast) with a strong signal, otherwise teletext errors may occur.

To Switch On Teletext :

After selecting the TV channel which carries the teletext service you wish to view, press **⏏**.



To Select a Teletext page:

Input 3 digits for the page number, using the numbered buttons.

- If you have made a mistake, retype the correct page number.
- If the counter on the screen continues searching, it is because this page is not available. In that case, input another page number

To access the next or preceding page:

Press **PROGR + (⏏)** or **PROGR - (⏏)**.

To superimpose teletext on to the TV:

Whilst you are viewing teletext, press **⏏**. Press it again to cancel teletext mode.

To freeze a teletext page:

Some teletext pages have sub-pages which follow on automatically. To stop them, press

⏏/⏏. Press it again to cancel the freeze.

To reveal concealed information (e.g: answer to a quiz):

Press **⏏/⏏**. Press it again to conceal the information.

To Switch Off Teletext:

Press **⏏**.

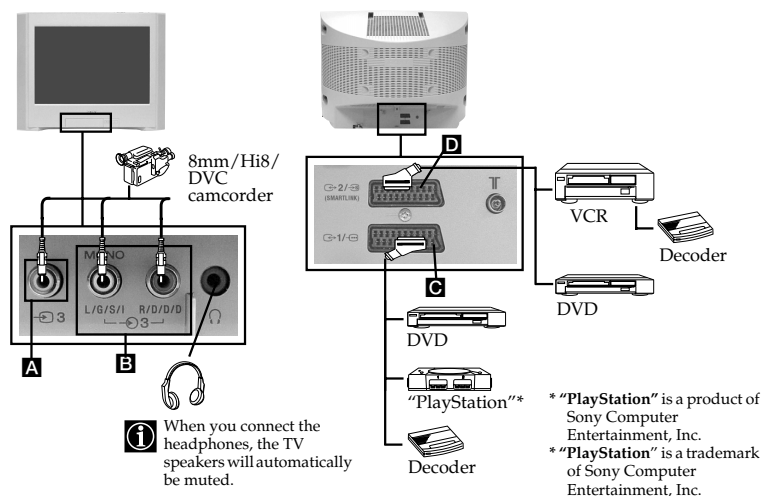
Fasttext

i Fasttext service lets you access pages with one button push.

While you are in Teletext mode and Fasttext is broadcast, a colour coded menu appears at the bottom of the teletext page. Press the colour button (red, green, yellow or blue) to access the corresponding page.

Connecting Optional Equipment

① Using the following instructions you can connect a wide range of optional equipment to your TV set. (Connecting cables are not supplied).



Connecting a VCR:

To connect a VCR, please refer to the section "Connecting the aerial and VCR" of this instruction manual. We recommend you connect your VCR using a scart lead. If you do not have a scart lead, tune in the VCR test signal to the TV programme number "0" by using the "Manual Programme Preset" option. (for details of how to manually programme these presets, see page 14, step a).

Refer to your VCR instruction manual to find out how to find the output channel of your VCR.

Connecting a VCR that supports SmartLink:

① SmartLink is a direct link between the TV set and the VCR. For more information on SmartLink, please refer to the instruction manual of your VCR. If you use a VCR that supports SmartLink, please connect the VCR by using a Scart lead to the Scart **G2/-S D**.

If you have connected a decoder to the Scart **G2/-S** or through a VCR connected to this Scart:

Select the "Manual Programme Preset" option in the "Set Up" menu and after entering in the "Decoder**" option, select "On" (by using **▼** or **▲**). Repeat this option for each scrambling signal.

**This option is only available depending on the country you have selected in the "Language/Country" menu.

continued...

Using Optional Equipment

- 1 Connect your equipment to the designated TV socket, as indicated in the previous page.
- 2 Switch on the connected equipment.
- 3 To watch the picture of the connected equipment, press the **↺** button repeatedly until the correct input symbol appears on the screen.

Symbol Input Signals

- | | |
|-----------|--|
| ↺1 | • Audio / video input signal through the Scart connector C . |
| ↺2 | • RGB input signal through the Scart connector C . This symbol appears only if a RGB source has been connected. |
| ↺3 | • Audio / video input signal through the Scart connector D . |
| ↺4 | • S Video input signal through the Scart connector D . |
| ↺5 | • Video input signal through the phono socket A and Audio input signal through B . |

- 4 Press **□** button on the remote control to return to the normal TV picture.

For Mono Equipment

Connect the phono plug to the L/G/S/I socket on the front of the TV and select **↺3** input signal using the instructions above. Finally, refer to the "Sound Adjustment" section of this manual and select "Dual Sound" "A" on the sound menu screen (see page 11).

Specifications



TV system:
Depending on your country selection:
B/G/H, D/K



Colour system:
PAL, SECAM
NTSC 3.58, 4.43 (only Video In)

Channel Coverage:
VHF: E2-E12
UHF: E21-E69
CATV: S1-S20
HYPER: S21-S41
D/K: R1-R12, R21-R69


Picture Tube:
Flat Display FD Trinitron
29" (approx. 72 cm. measured diagonally)


Rear Terminals


 1/  21-pin scart connector (CENELEC standard) including audio/video input, RGB input, TV audio/video output.

 2/  21-pin Scart connector (CENELEC standard) including audio / video input, S video input, selectable audio / video output and SmartLink interface.

Front Terminals

 3 video input – phono jack

 3 audio input – phono jacks

 headphones jack

Sound Output:
2 x 10 W (music power)
2 x 5 W (RMS)

Power Consumption:
94 W

Standby Power Consumption:
0.5 W

Dimensions (w x h x d) :
Approx. 788 x 598 x 523 mm.

Weight:
Approx. 45.8 Kg.

Accessories supplied:
1 Remote Control (RM-946)
2 Batteries (IEC designated)


Other features:








- Teletext, Fastext, TOPtext
- Sleep Timer
- SmartLink (direct link between your TV set and a compatible VCR. For more information on SmartLink, please refer to the Instruction Manual of your VCR).
- TV system Autodetection.


Design and specifications are subject to change without notice.

Ecological Paper- Totally Chlorine Free 

Troubleshooting

 Here are some simple solutions to the problems which may affect the picture and sound.

Problem	Solution
No picture (screen is dark) and no sound.	<ul style="list-style-type: none">• Check the aerial connection.• Plug the TV in and press the  button on the front of the TV.• If the standby indicator  is on, press  button on the remote control.
Poor or no picture (screen is dark), but good sound.	<ul style="list-style-type: none">• Using the menu system, select the “Picture Adjustment” menu and select “Reset” to return to the factory settings (see page 10).
No picture or no menu information from equipment connected to the Scart connector.	<ul style="list-style-type: none">• Check that the optional equipment is on and press the  button repeatedly on the remote control until the correct input symbol is displayed on the screen (see page 19).
Good picture, no sound.	<ul style="list-style-type: none">• Press the  + button on the remote control.• Check that “TV Speakers” is “On” on the “Sound Adjustment” menu (see page 11).• Check that headphones are not connected.
No colour on colour programmes.	<ul style="list-style-type: none">• Using the menu system, select the “Picture Adjustment” menu and select “Reset” to return to factory settings (see page 10).
Distorted picture when changing programmes or selecting teletext.	<ul style="list-style-type: none">• Turn off any equipment connected to the Scart connector on the rear of the TV.
Wrong characters appear when viewing teletext.	<ul style="list-style-type: none">• Using the menu system, enter to the “Language/ Country” (see page 12) menu and select the country in which you operate the TV set. For Cyrillic languages, we recommend selecting Russia country if your own country does not appear in the list.
Picture slanted	<ul style="list-style-type: none">• Using the menu system, select the “Picture Rotation” option in the “Detail Set Up” menu to correct the picture slant (see page 16).
Noisy picture when viewing a TV channel.	<ul style="list-style-type: none">• Using the menu system, select the “Manual Programme Preset” menu and adjust Fine Tuning (AFT) to obtain better picture reception (see page 14).• Using the menu system, select the “Noise Reduction” option in the “Detail Set Up” menu and select “Auto” to reduce the noise in the picture (see page 15).
No unscrambled picture whilst viewing unscrambled channel with a decoder connected through the Scart connector  .	<ul style="list-style-type: none">• Using the menu system, select the “Set Up” menu. Then enter to “Detail Set Up” option and set “AV2 Output” to “TV” (see page 15).
Remote control does not function.	<ul style="list-style-type: none">• Replace the batteries.
The standby indicator  on the TV flashes.	<ul style="list-style-type: none">• Contact your nearest Sony service centre.

 If you continue to experience problems, have your TV serviced by qualified personnel. Never open the casing yourself.

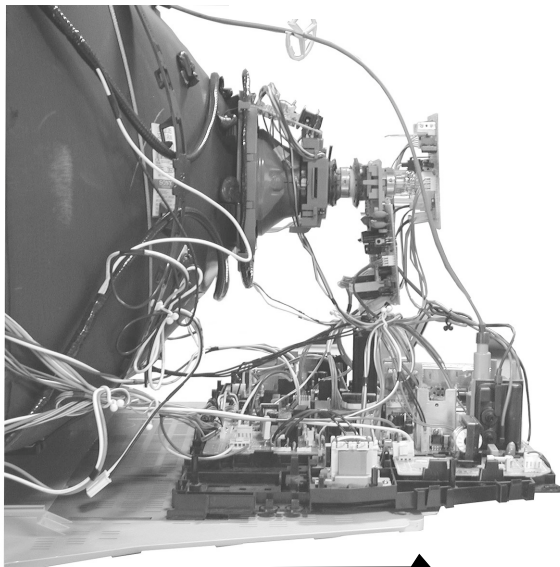
SECTION 2 DISASSEMBLY

2-1. Rear Cover Removal

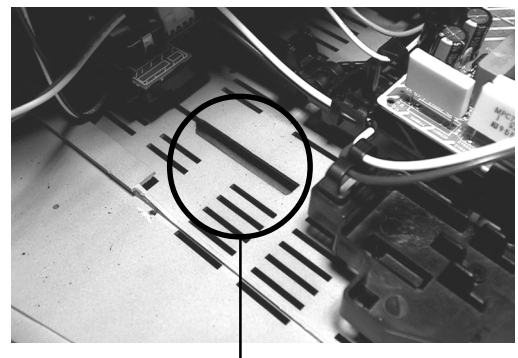


Remove the rear cover fixing screws indicated and withdraw the rear cover from the Beznet.

2-2. Chassis Removal and Refitting

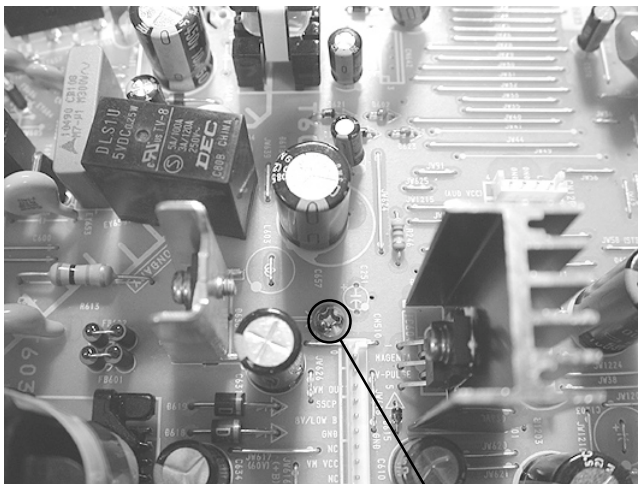


To remove lift the main bracket rear slightly and slide the chassis away from the beznet, whilst holding the beznet base down. Ensure that the interconnecting leads are released from their purse locks to prevent damage being caused.



When refitting the chassis ensure that the main bracket is located in the beznet guide slots before sliding the chassis forwards. Refit the interconnecting leads in their respective purse locks.

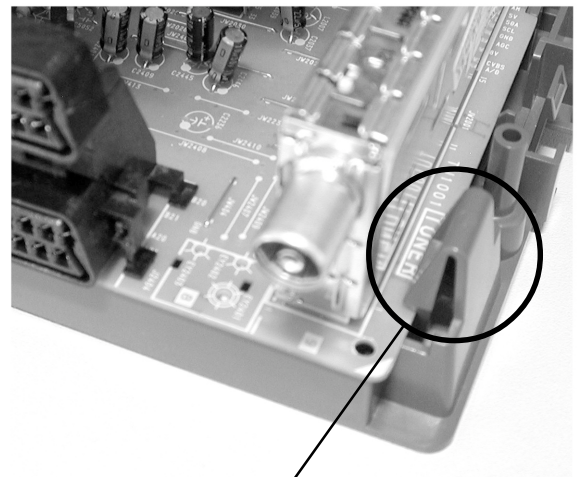
2-3. A Board Removal [Step 1]



Screw.

Remove the 3 screws securing the PWB to the main bracket. 1 can be seen in the photo above and the other 2 are either side of the FBT assembly.

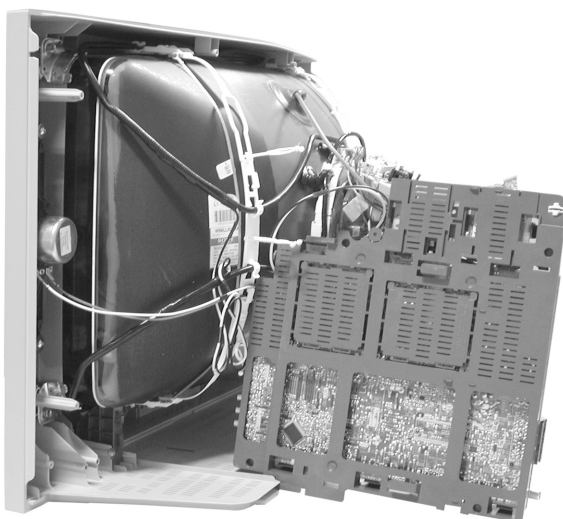
2-4. A Board Removal [Step 2]



Clip.

Release the 3 securing clips located at the side of the chassis and slide the PWB clear of the bracket.

2-5. Service Position

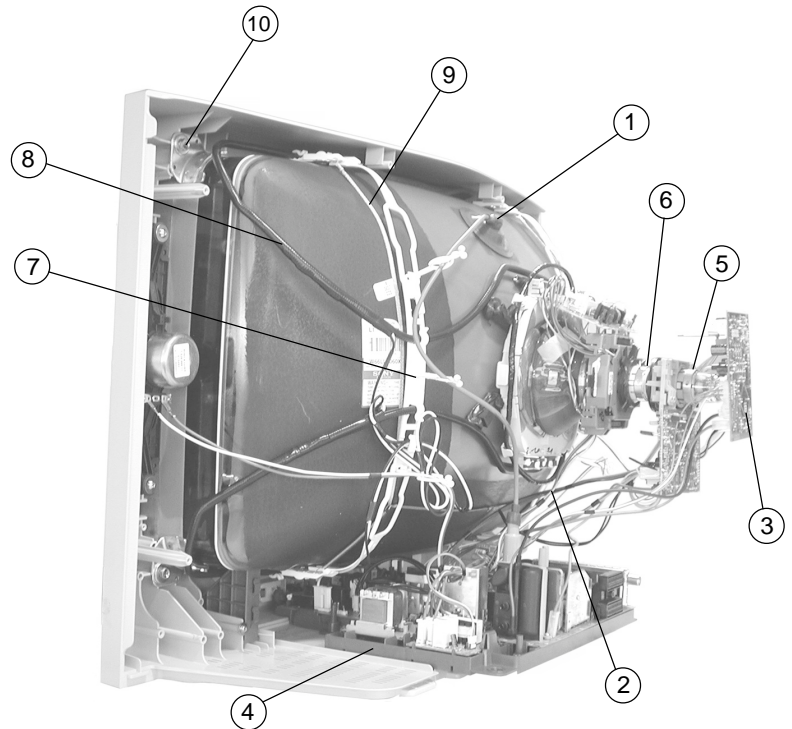
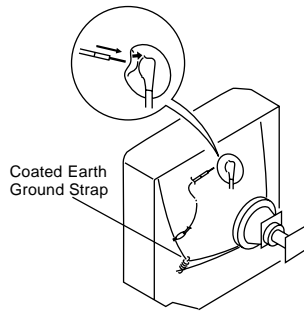


Position the chassis as indicated to access the solder side of the PWB's. To gain access to the A Board follow the instructions on page 16. [Removal and Replacement of the main bracket bottom plates].

2-6. Picture Tube Removal

WARNING: BEFORE REMOVING THE ANODE CAP

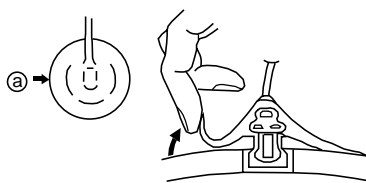
High voltage remains in the CRT even after the power is disconnected. To avoid electric shock, discharge CRT **before** attempting to remove the anode cap. Short between anode and CRT coated earth ground strap.



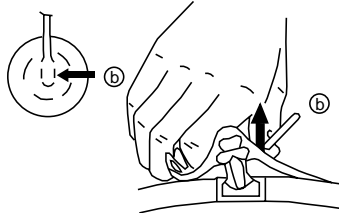
1. Discharge the anode of the CRT and remove the anode cap.
2. Unplug all interconnecting leads from the Deflection yoke, neck assy, degaussing coils and CRT grounding strap.
3. Remove the C Board from the CRT.
4. Remove the chassis assembly.
5. Loosen the Neck assembly fixing screw and remove.
6. Loosen the Deflection yoke fixing screw and remove.
7. Place the set with the CRT face down on a cushion and remove the Degaussing Coil holders.
8. Remove the Degaussing Coils.
9. Remove the CRT grounding strap and spring tentioners.
10. Unscrew the four CRT fixing screws [located on each CRT corner] and remove the CRT.
[Take care not to handle the CRT by the neck.]

Removal of the Anode-Cap

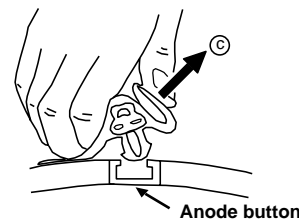
* REMOVING PROCEDURES.



- ① Turn up one side of the rubber cap in the direction indicated by the arrow (a)



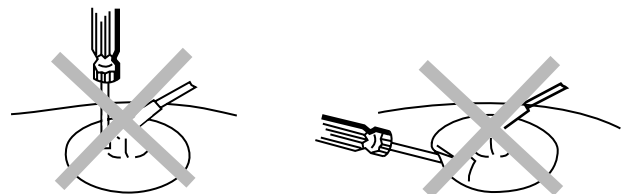
- ② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow (b)



- ③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow (c)

How to handle the Anode-Cap

1. To prevent damaging the surface of the anode-cap do not use sharp materials.
2. Do not apply too great a pressure on the rubber, as this may cause damage to the anode connector.
3. A metal fitting called a shatter hook terminal is fitted inside the rubber cap.
4. Do not turn the rubber foot over excessively, this may cause damage if the shatter hook sticks out.



REMOVAL AND REPLACEMENT OF THE MAIN-BRACKET BOTTOM PLATES.

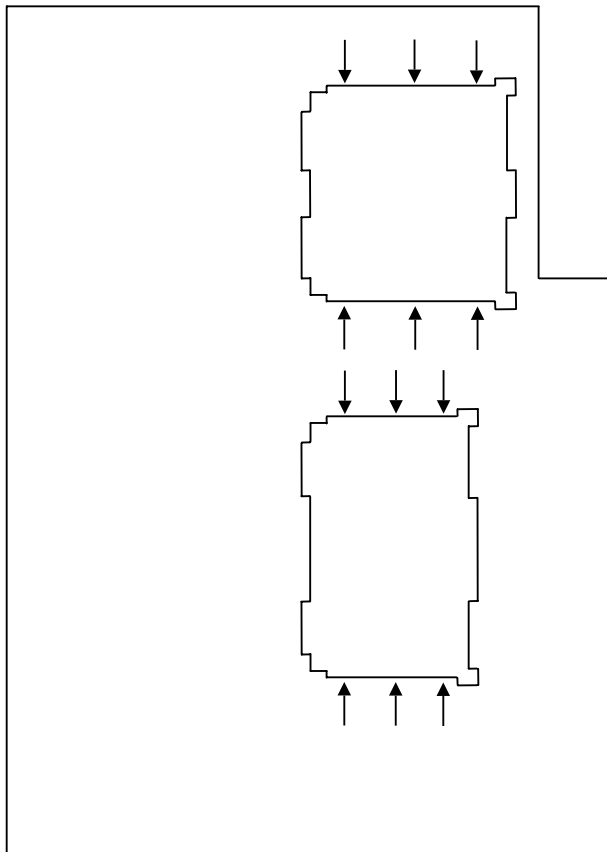
(1) REMOVING THE PLATES

In the event of servicing being required to the solder side of the A Board printed wiring board, the bottom plates fitted to the main chassis bracket require to be removed.

This is performed by cutting the gates with a sharp wire cutter at the locations indicated by the arrows.

Note : There are 2 plates fitted to the main bracket.

Only remove the necessary plate to gain access to the printed wiring board.

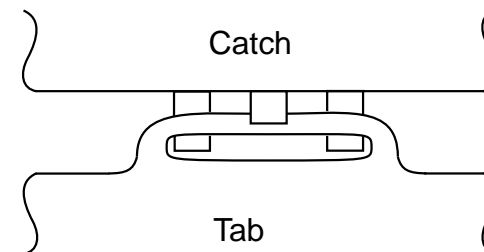


For safety reasons, on no account should the plates be removed and not refitted after servicing.

(2) REFITTING THE PLATES

Because the plates differ in size it is important that the correct plates are refitted in their original location.

Please note that the plates need to be rotated 180 degrees from their cut position to allow the tabs to be fitted into their catch positions.



SECTION 3 SET-UP ADJUSTMENTS

- When complete readjustment is necessary or a new picture tube is installed, carry out the following adjustments.
- Unless there are specific instructions to the contrary, carry out these adjustments with the rated power supply.
- Unless there are specific instructions to the contrary, set the controls and switches to the following settings :

Contrast 80% [or remote control normal]

Brightness 50%

Carry out the adjustments in the following order :

- 3-1. Beam Landing.
- 3-2. Convergence.
- 3-3. Focus.
- 3-4. White Balance.

Note : Test equipment required.

1. Color bar/pattern generator.
2. Degausser.
3. Oscilloscope.
4. Digital multimeter.

Preparation:

1. In order to reduce the influence of geomagnetism on the set's picture tube, face it in an easterly or westerly direction.
2. Switch on the set's power and degauss with the degausser.

3-1. Beam Landing

1. Input an all white signal from the pattern generator. Set the Contrast and Brightness to normal.
2. Set the pattern generator raster signal to Red.
3. Move the deflection yoke forward and adjust with the purity control so that the Red is at the centre and the Blue and Green take up equally sized areas on each side of the screen. [See Fig.3-1 - 3-3].
4. Move the deflection yoke backwards and adjust so that the entire screen becomes Red. [See Fig.3-1]
5. Switch the raster signal to Blue, then to Green and verify the condition.
6. When the position of the deflection yoke has been determined, fasten the deflection yoke with the screws.
7. If the beam does not land correctly in all the corners, use a magnet to correct it. [See Fig.3-4]

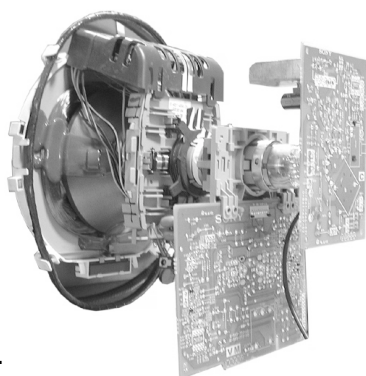


Fig. 3-1.

Caution :

High voltages are present on the Deflection yoke terminals - take care when handling the Deflection yoke whilst carrying out adjustments.

Fig. 3-2.

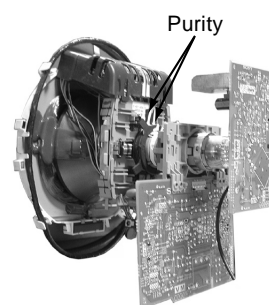


Fig. 3-3.

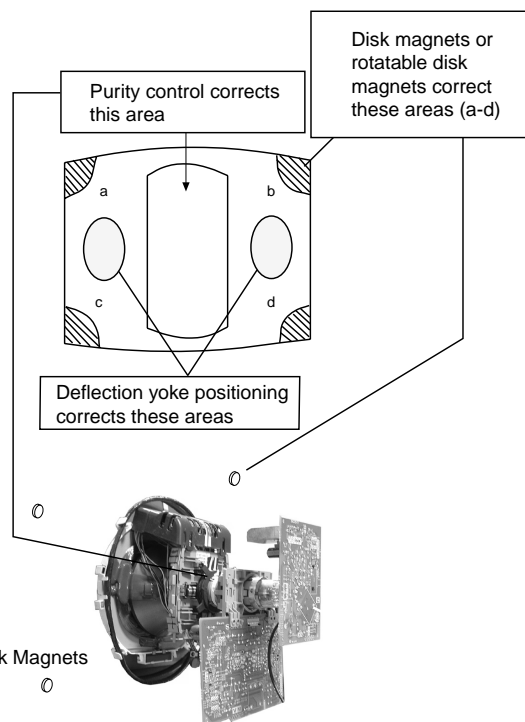
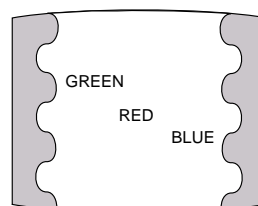


Fig.3-4

3-2. Convergence

Preparation:

- Before starting this adjustment, adjust the focus, horizontal size and vertical size.
- Minimize the Brightness setting.
- Input a dot pattern from the pattern generator.

Horizontal and Vertical Static Convergence

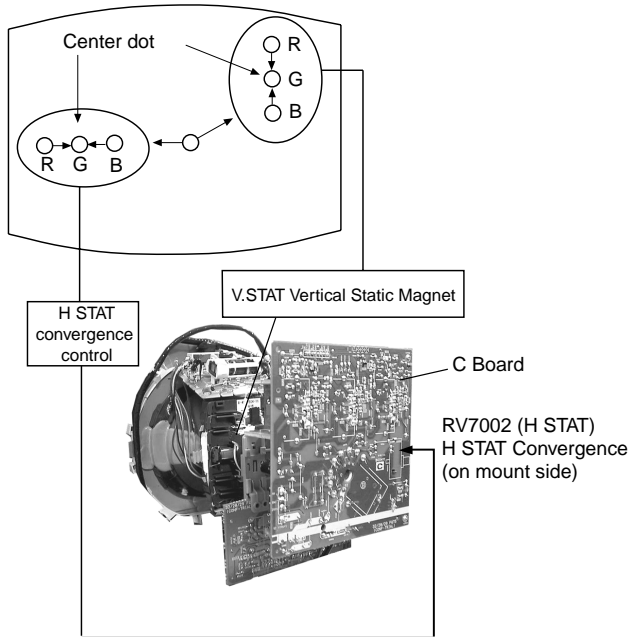
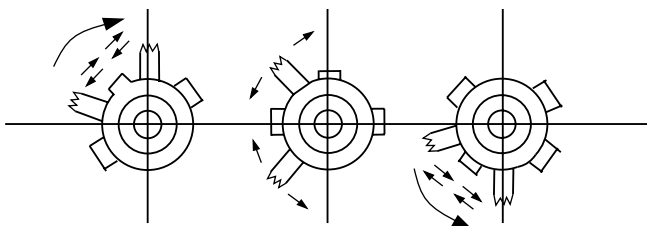


Fig.3-5

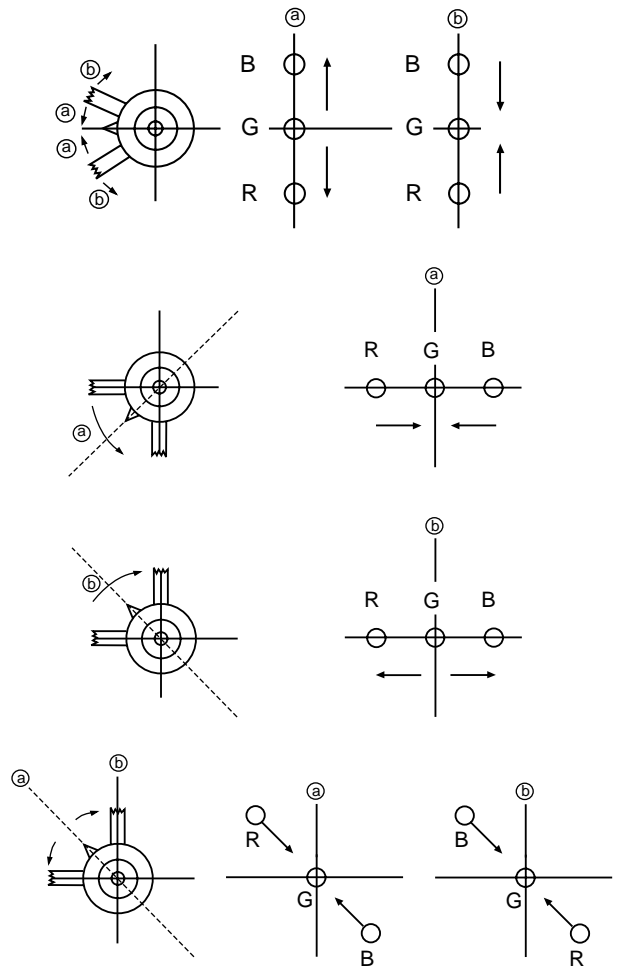
1. [Moving horizontally], adjust the H.STAT control so that the Red, Green and Blue points are on top of each other at the centre of the screen.
2. [Moving vertically], adjust the V.STAT magnet so that the Red, Green and Blue points are on top of each other at the centre of the screen.
3. If the H.STAT variable resistor is unable to bring the Red, Green and Blue points together at the centre of the screen, adjust the horizontal convergence with the H.STAT variable resistor and the V.STAT magnet in the manner indicated below.

[In this case, the H.STAT variable resistor and the V.STAT magnet influence each other].

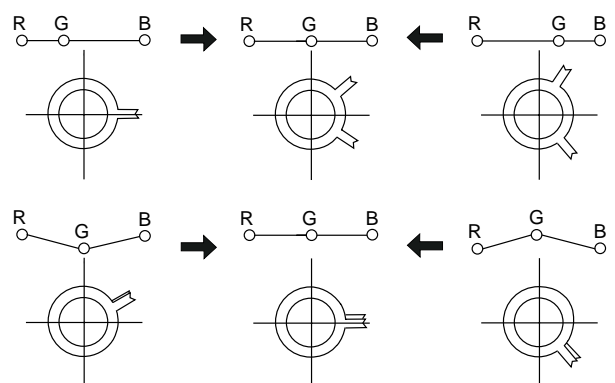
- Tilt the V.STAT magnet and adjust the static convergence by opening or closing the V.STAT magnet.



4. If the V.STAT magnet is moved in the direction of the (a) and (b) arrows, the Red, Green and Blue points move as indicated below.



Operation of the BMC (Hexapole) magnet.



The movement of the magnets interact with each other and so the respective dot position should be monitored while carrying out this adjustment.

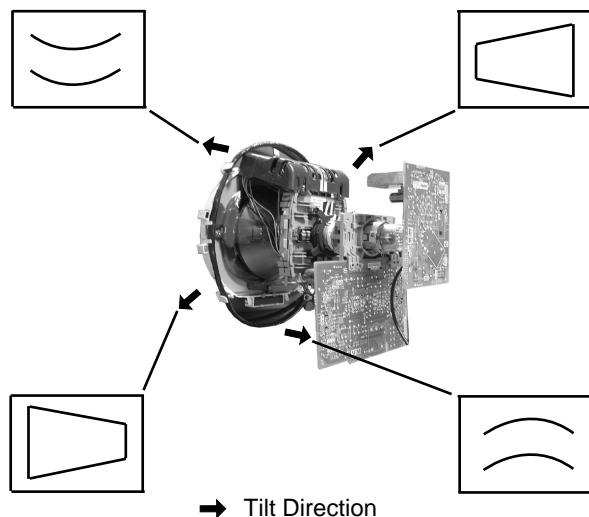
Use the H.STAT VR to adjust the Red, Green and Blue dots so that they coincide at the centre of the screen (by moving the dots in the horizontal direction).

Geometry Adjustment.

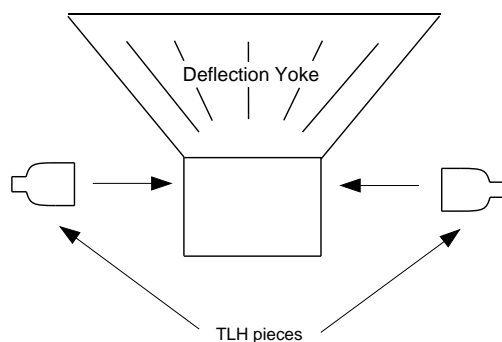
Preparation:

Before starting this adjustment, adjust the horizontal and vertical static convergence.

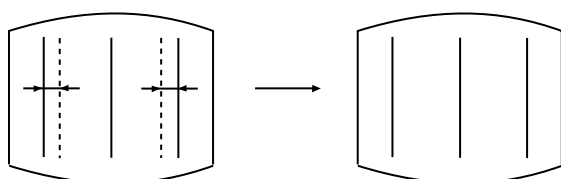
1. Remove the deflection yoke spacer.
2. Tilt the deflection yoke as indicated in the figure below and optimise the geometry.
Tilting the DY Up and Down will balance the upper and lower pin adjustment.
Tilting the DY Left and Right will balance the H-Trap adjustment.
3. Re-install the deflection yoke spacer.



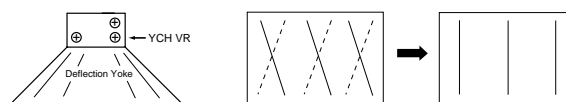
HTIL Adjustment



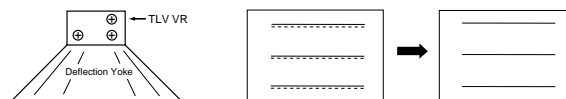
HTIL correction can be performed by adding a TLH correction assembly to the Deflection yoke.



YCH Adjustment

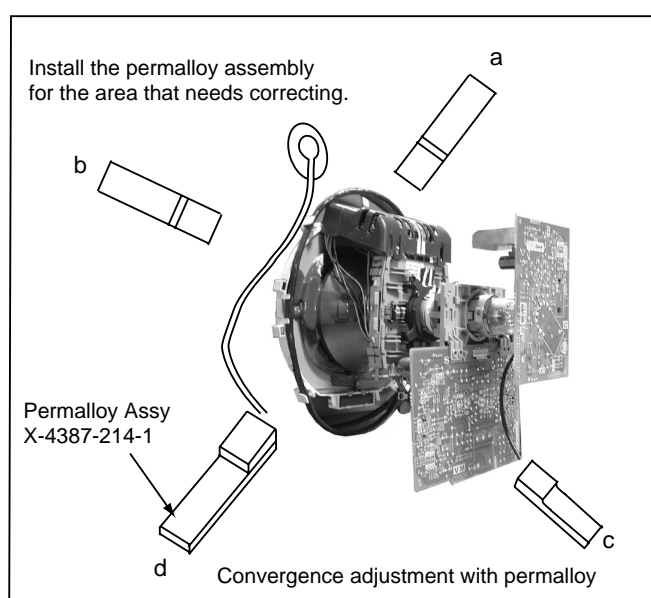
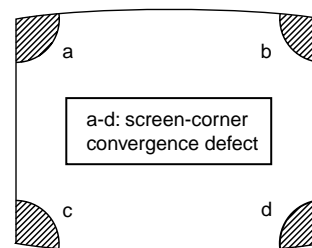


TLV Adjustment

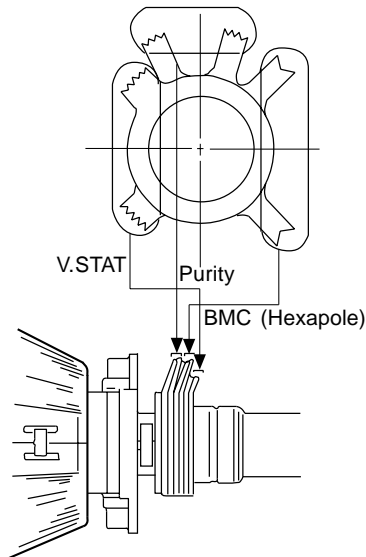


Screen Corner Convergence

If you are unable to adjust the corner convergence properly, this can be corrected with the use of permalloy magnets.

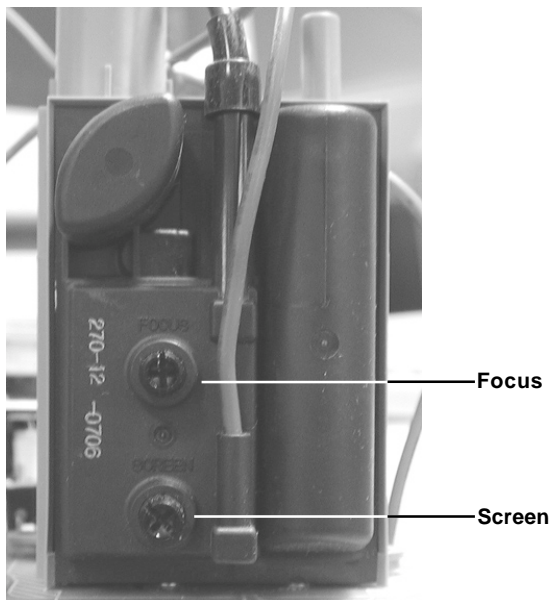


Layout of each control



3-3. Focus Adjustment

1. Receive a television broadcast signal.
2. Normalize the picture setting.
3. Adjust the focus control located on the flyback transformer to obtain the best focus at the centre of the screen. Bring only the centre area of the screen into focus, the magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.



3-4. Screen (G2), White Balance

[Adjustment in the service mode using the remote commander]

G2 adjustment

1. Input a dot signal from the pattern generator.
2. Enter the 'Service Mode' by pressing 'TEST', 'TEST' and '38' (TT-38) on the remote commander, to set up the G2 service adjustment mode.
3. Whilst watching the picture, adjust the G2 control [SCREEN] located on the Flyback Transformer to the point where the OSD menu indication shows "OK".

White balance adjustment for TV mode

1. Input an all-white signal from the pattern generator.
2. Enter into the 'Service Mode' by pressing 'TEST', 'TEST' and 'MENU' on the Service Commander.
3. Select 'Service' from the on screen menu display and press the right arrow button on the remote commander.
4. The 'Service' menu will appear on the screen. [See Page 21]
5. Set the 'Contrast' to MAX.
6. Set the 'R-Drive' to 25.
7. Adjust the 'G-Drive' and the 'B-Drive' so that the white balance becomes optimum.
8. Press the 'OK' button to write the data for each item.
9. Set the 'Contrast' to MIN.
10. Adjust the 'G-Cutoff', and the 'R-Cutoff' with the left and right buttons on the remote commander so that the white balance becomes optimum.
11. Press the 'OK' button to write the data for each item.

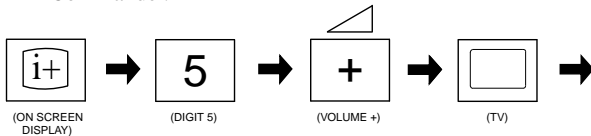
SECTION 4 CIRCUIT ADJUSTMENTS

4-1. Electrical Adjustments

Service adjustments to this model can be performed using the supplied remote Commander RM-946.

How to enter into the Service Mode

1. Turn on the main power switch and enter into the stand-by mode.
2. Press the following sequence of buttons on the Remote Commander.



'TT—' will appear in the upper right corner of the screen.
Other status information will also be displayed.

3. Press 'MENU' on the remote commander to obtain the following menu on the screen.

```

Geometry
Service
Design
Status
Sound
IF adjust
Error Menu

FE-2 Stereo v3.44
Factory data 00h FFh
MSP Device : MSP3410G
    
```

4. Move to the corresponding adjustment item using the up or down arrow buttons on the Remote Commander.
5. Press the right arrow button to enter into the required menu item.
6. Press the 'Menu' button on the Remote Commander to quit the Service Mode when all adjustments have been completed.

Note :

- After carrying out the service adjustments, to prevent the customer accessing the 'Service Menu' switch the TV set OFF and then ON.

ERROR MENU

```

E02      OCP      (0, 255)  0
E03      OVP N/A  (0, 255)  0
E04      VSYNC    (0, 255)  0
E05      IKR      (0, 255)  0
E06      IIC      (0, 255)  0
E07      NVM      (0, 255)  0
E08      JUNGLE   (0, 255)  0
E09      TUNER    (0, 255)  0
E10      SOUNDP   (0, 255)  0
E11      8V       (0, 255)  0
    
```

WORKING TIME

```

HOURS      2
MINUTES    11
    
```

SERVICE

```

Offset-R      (0, 63)  Adj
Offset-G      (0, 63)  Adj
R-Drive       (0, 63)  31
G-Drive       (0, 63)  Adj
B-Drive       (0, 63)  Adj
Peak-Freq     (0, 3)   0
Luma-Delay    (0, 15)  8
SC0           (0, 3)   3
White-Peak    (0, 15)  15
Subcont       (0, 15)  8
Subbright     (0, 63)  30
Subcol        (0, 63)  Adj
Subsharp      (0, 63)  25
Cutoff Br.    (0, 63)  31
Br OSD        (0, 15)  10
Br TXT        (0, 15)  7
    
```

GEOMETRY

```

V-Linearity   (0, 63)  Adj
V-Scroll      (0, 63)  32
Left-HBlk     (0, 15)  10
Right-HBlk    (0, 15)  7
V-Angle       (0, 63)  Adj
V-Bow         (0, 63)  Adj
H-Centre      (0, 63)  Adj
H-Size        (0, 63)  Adj
Pin-Amp       (0, 63)  Adj
U-Corner-Pin  (0, 63)  Adj
L-Corner-Pin  (0, 63)  Adj
Pin Phase     (0, 63)  Adj
V-Slope       (0, 63)  40
V-Size        (0, 63)  Adj
S-Correction  (0, 63)  Adj
V-Centre      (0, 63)  Adj
V-Zoom        (0, 63)  27
Magenta       (0, 63)  31
    
```

IF ADJUST

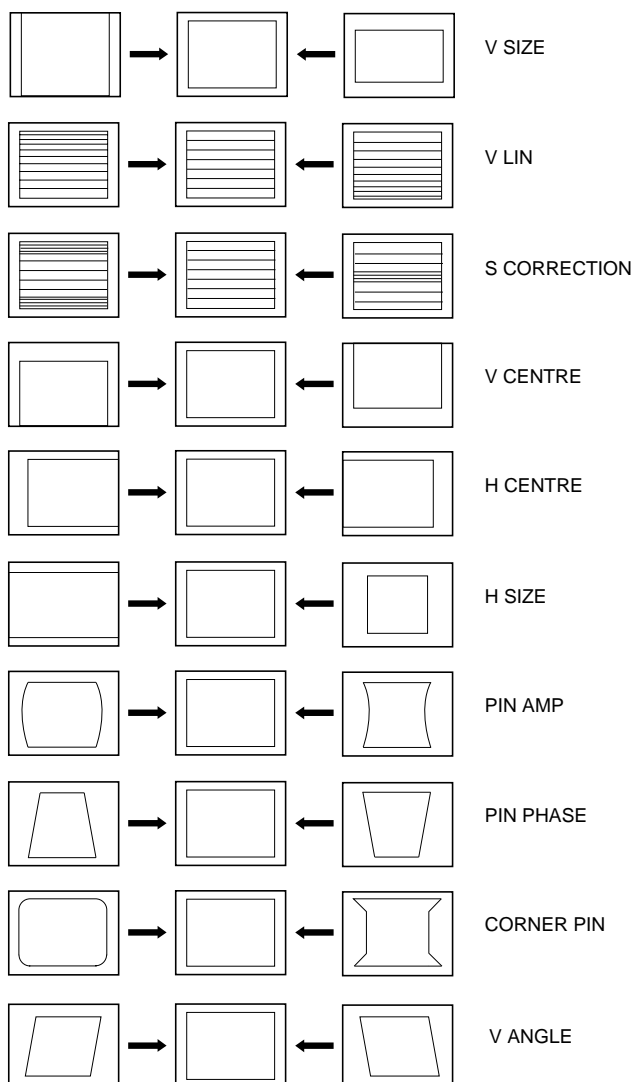
```

AGC Adjust    (-16, +15)  +0
Automute      1
Audio Gain    0
L Gating      0
    
```

Deflection System Adjustment

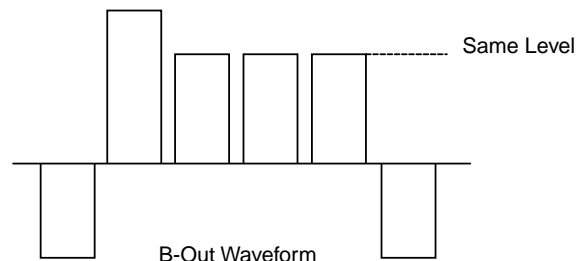
1. Enter into the 'Geometry' service menu.
2. Select and adjust each item in order to obtain the optimum image.

GEOMETRY		
V-Linearity	(0, 63)	Adj
V-Scroll	(0, 63)	32
Left-HBlk	(0, 15)	10
Right-HBlk	(0, 15)	7
V-Angle	(0, 63)	Adj
V-Bow	(0, 63)	Adj
H-Centre	(0, 63)	Adj
H-Size	(0, 63)	Adj
Pin-Amp	(0, 63)	Adj
U-Corner-Pin	(0, 63)	Adj
L-Corner-Pin	(0, 63)	Adj
Pin Phase	(0, 63)	Adj
V-Slope	(0, 63)	40
V-Size	(0, 63)	Adj
S-Correction	(0, 63)	Adj
V-Centre	(0, 63)	Adj
V-Zoom	(0, 63)	27
Magenta	(0, 63)	31



Sub Colour Adjustment

1. Receive a PAL colour bar signal.
2. Connect an oscilloscope to Pin 5 of CN3003 [A Board].
3. Enter into the 'Service' service menu.
4. Adjust the 'Sub Colour' data so that the Cyan, Magenta and Blue colour bars are of equal levels as indicated below.



Sub Brightness Adjustment

1. Input a Monoscope pattern.
2. Press 'TEST' 'TEST' 13 on the Remote Commander.
3. Adjust the 'Sub-Brightness' data so that there is barely a difference between the 0 IRE and 10 IRE signal levels.

Sub Contrast Adjustment

1. Input a video signal that contains a small 100% white area on a black background.
2. Connect an digital voltmeter to Pin 10 of J7001 [C Board].
3. Adjust the Sub-Contrast ['TT11'] to obtain a voltage of 105 +/- 5V.

4-2. TEST MODE 1:

Test Mode 1 is available by pressing the "TEST" button once, OSD "T" appears. The functions described below are available by selecting the indicated keys. The "T" is released automatically after each command is executed.

KEY	T-MODE FUNCTION
volume +	volume maximum
volume -	Picture minimum
picture +	Picture maximum
picture -	Picture minimum
colour up	colour maximum
colour down	colour minimum
brightness - bright	brightness maximum
brightness - dark	brightness minimum
hue - purplish	hue - purplish
hue - greenish	hue - greenish
sharpness - sharp	sharpness maximum
sharpness - soft	sharpness minimum
balance left	balance full left
balance right	balance full right
treble up	treble maximum
treble down	treble minimum
bass up	bass maximum
bass down	bass minimum

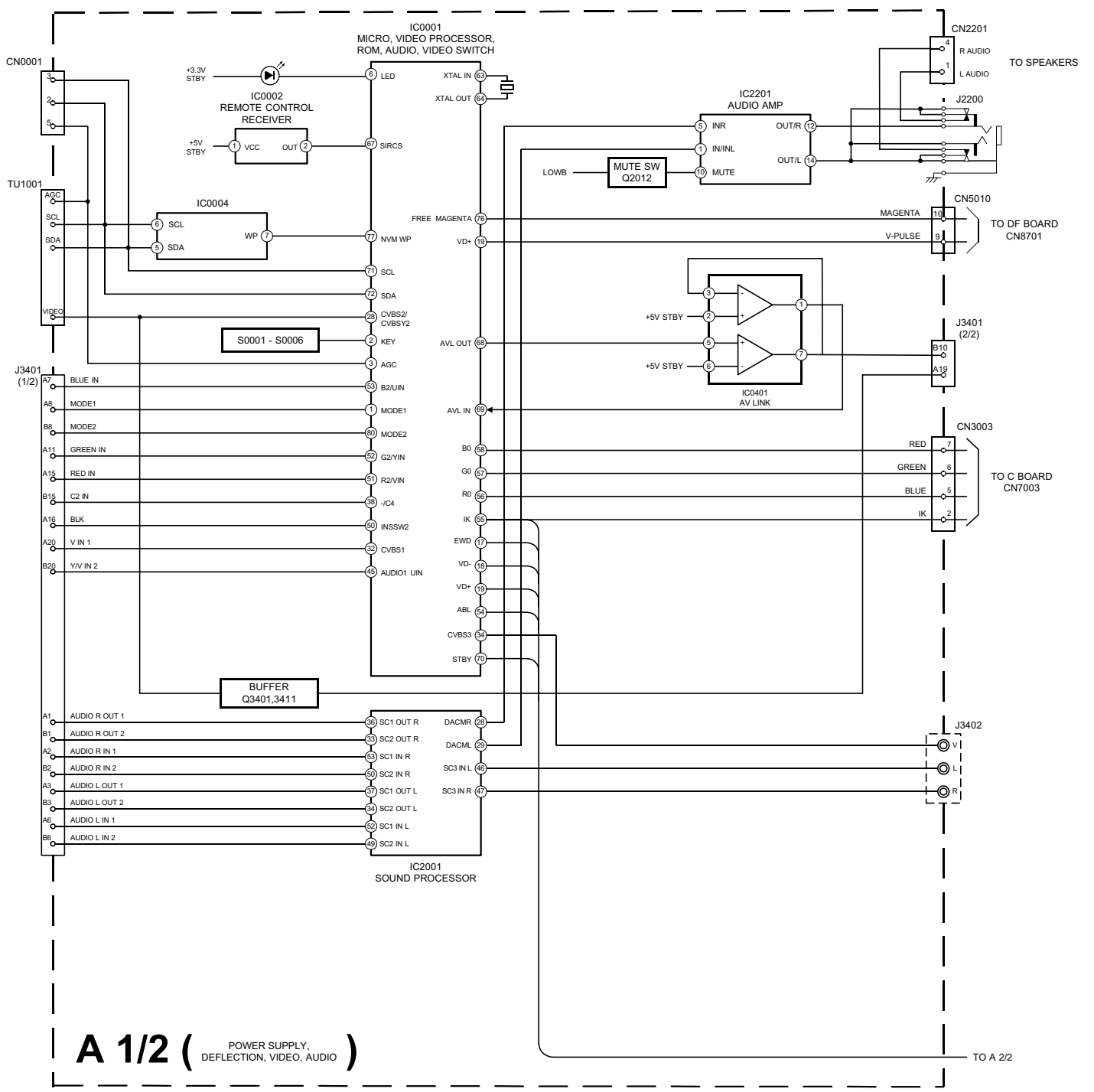
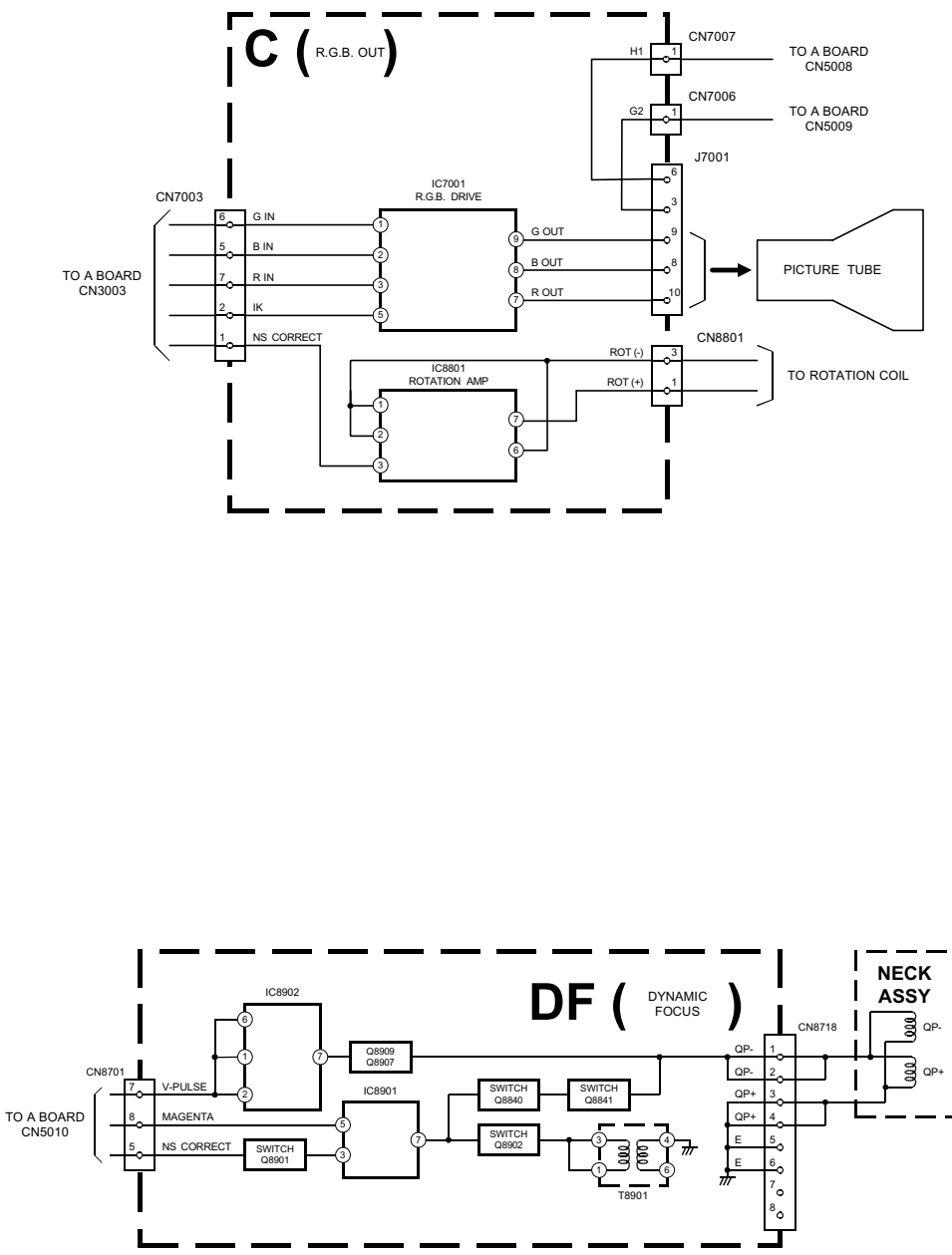
4-3. TEST MODE 2:

Test Mode 2 is available in Service Mode, OSD "TT" appears. The functions described below are available by selecting the two numbers. To release "Test mode 2", press 00 or switch the TV set into Stand-by mode.

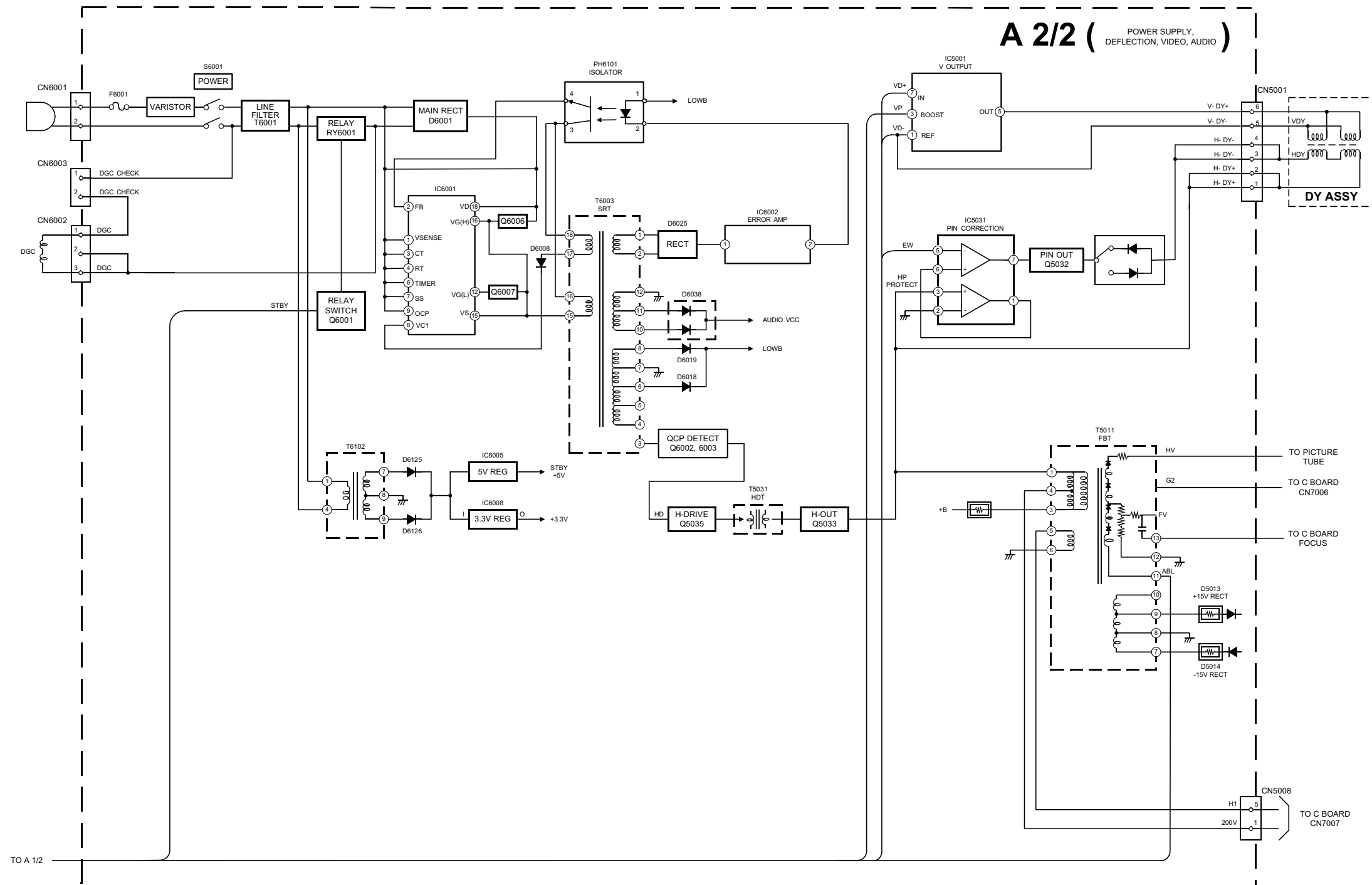
00	'TT' mode off
01	Picture maximum
02	Picture minimum
03	Set speaker/headphone Volume to 35%
04	Set speaker/headphone Volume to 50%
05	Set speaker/headphone Volume to 65%
06	Set speaker/headphone Volume to 80%
07	Ageing mode
08	Shipping Condition
11	Sub picture adjustment
12	Sub colour adjustment
13	Sub Brightness adjustment
14	Text H Position adjustment
15	Rotation Coil Test
16	Picture level 50%
19	Factory Mode Enable/Disable
21	Destination ADEKR
22	Destination BL
23	Destination ADEKR
24	Destination U
25	Destination ADEKR
26	Destination BL

27	Destination ADEKR
28	Destination ADEKR
31	Auto Shutoff Enable/Disable
33	Rotation ON/OFF
35	Toggle Wide Mode
36	Velocity Modulation (VM) OFF/ON test
38	G2 adjustment
39	AVC release timing delay enable/disable
41	Re-initialise NVM
43	Select Dual A sound
44	Select Dual B sound
45	Select Mono sound
46	Select Stereo sound
48	Set NVM as non virgin
49	Set NVM as virgin
51	Virtual Dolby on/off
52	Subwoofer / MPB (Bass enhancement) Enable
53	FM over-modulation enable/disable
54	Dot structure C/M (chroma trap)
55	Tuner selection (SONY/ALPS)
56	BBE enable/disable
57	BBE menu line enable/disable
58	Dolby-BBE combination (BBE is Off when Dolby is On, and vice versa)
59	Line 318 disappear problem C/M enable/disable
61	Auto AGC Adjustment
62	AM from baseband enable/disable
63	Enable/Disable YC3 connector
64	Enable/Disable RGB priority
65	RGB auto-detect enable/disable
66	On timer enable/disable
67	Manual AGC Adjustment
68	Enable/Disable X26 countermeasure (N problem)
69	Enable/Disable ACI feature. -> deleted
71	Force PAL video
72	Un-force PAL (restore normal video condition)
73	Enable Zweiton D/K2 system (6.5/6.74)
74	Enable Zweiton D/K3 system (6.5/5.74)
75	MSP error detection method
78	Balance full left
79	Balance full right
87	Local keys test
89	Enable/Disable watchdog
91	Set 14:9 zoom mode
92	Set SMART zoom mode
93	Set 16:9 zoom mode
94	Set ZOOM mode
95	Set 4:3 zoom mode
99	Display Error and Working Time menu

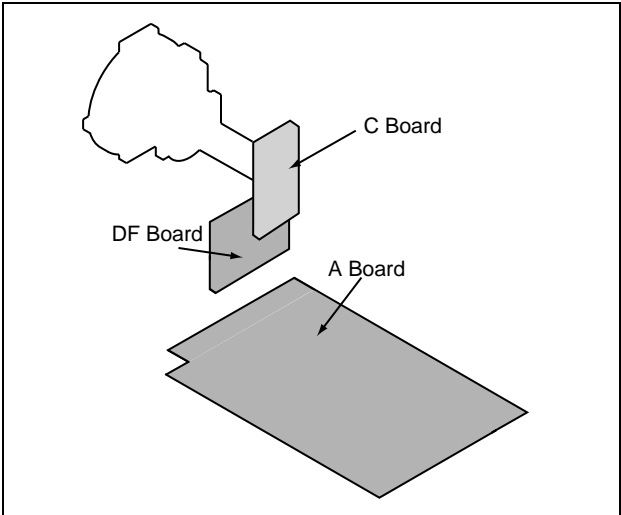
5-1. BLOCK DIAGRAMS (1)



5-1. BLOCK DIAGRAMS (2)



5-2. CIRCUIT BOARD LOCATION












5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS


Note :


- All capacitors are in μF unless otherwise noted.
- pF : μF 50WV or less are not indicated except for electrolytic types.
- Indication of resistance, which does not have one for rating electrical power, is as follows.


Pitch : 5mm
Electrical power rating : 1/4W

- Chip resistors are 1/10W
- All resistors are in ohms.
 $k = 1000 \text{ ohms}$, $M = 1000,000 \text{ ohms}$
-  : nonflammable resistor.
-  : fusible resistor.
-  : internal component.
-  : panel designation or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- All voltages are in Volts.
- Readings are taken with a 10Mohm digital mutimeter.
- Readings are taken with a color bar input signal.
- Voltage variations may be noted due to normal production tolerences.
-  : B + bus.
-  : B - bus.
-  : RF signal path.
-  : earth - ground.
-  : earth - chassis.

Reference Information

RESISTOR	RN	: METAL FILM
	RC	: SOLID
	FPRD	: NON FLAMMABLE CARBON
	FUSE	: NON FLAMMABLE FUSIBLE
	RS	: NON FLAMMABLE METAL OXIDE
	RB	: NON FLAMMABLE CEMENT
	RW	: NON FLAMMABLE WIREWOUND
		: ADJUSTMENT RESISTOR
COIL	LF-8L	: MICRO INDUCTOR
CAPACITOR	TA	: TANTALUM
	PS	: STYROL
	PP	: POLYPROPYLENE
	PT	: MYLAR
	MPS	: METALIZED POLYESTER
	MPP	: METALIZED POLYPROPYLENE
	ALB	: BIPOLAR
	ALT	: HIGH TEMPERATURE
	ALR	: HIGH RIPPLE

Note : The components identified by shading and marked  are critical for safety. Replace only with the part numbers specified in the parts list.

Note : Les composants identifiés par une trame et par une marque  sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces de numéro spécifié.

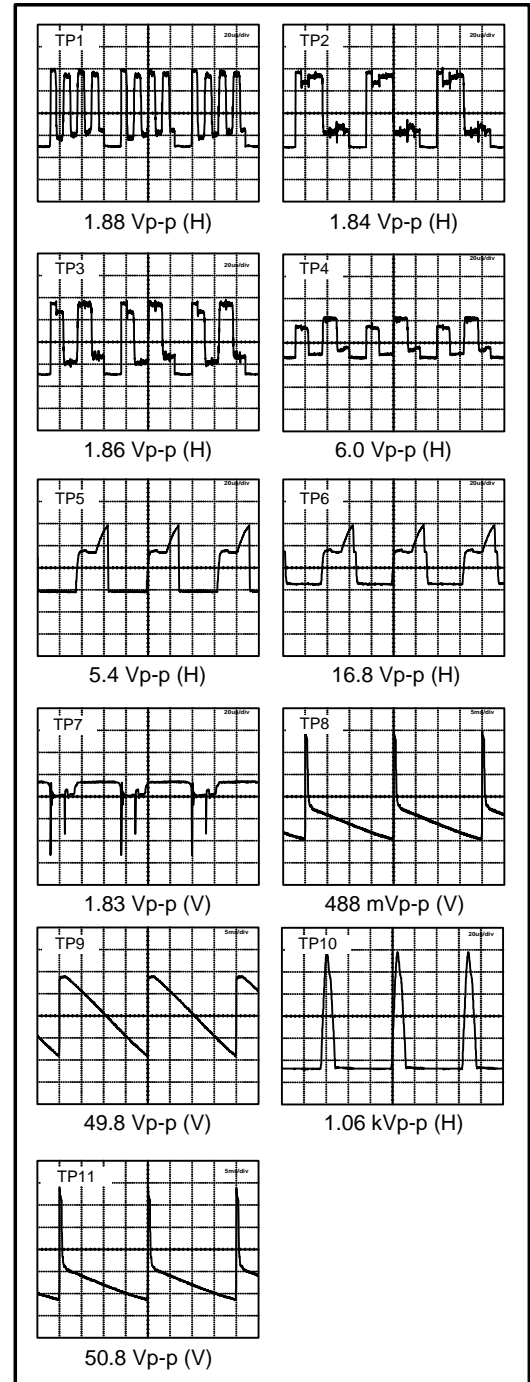
~ A Board Difference Table ~

Ref	KV-29CL10B	KV-29CL10E	KV-29CL10K	KV-29CL10U
TU1001	FRONT END BTF-EF411	FRONT END BTF-EC411	FRONT END BTF-EC411	FRONT END BTF-EU611

~ A Board IC Voltage Table ~

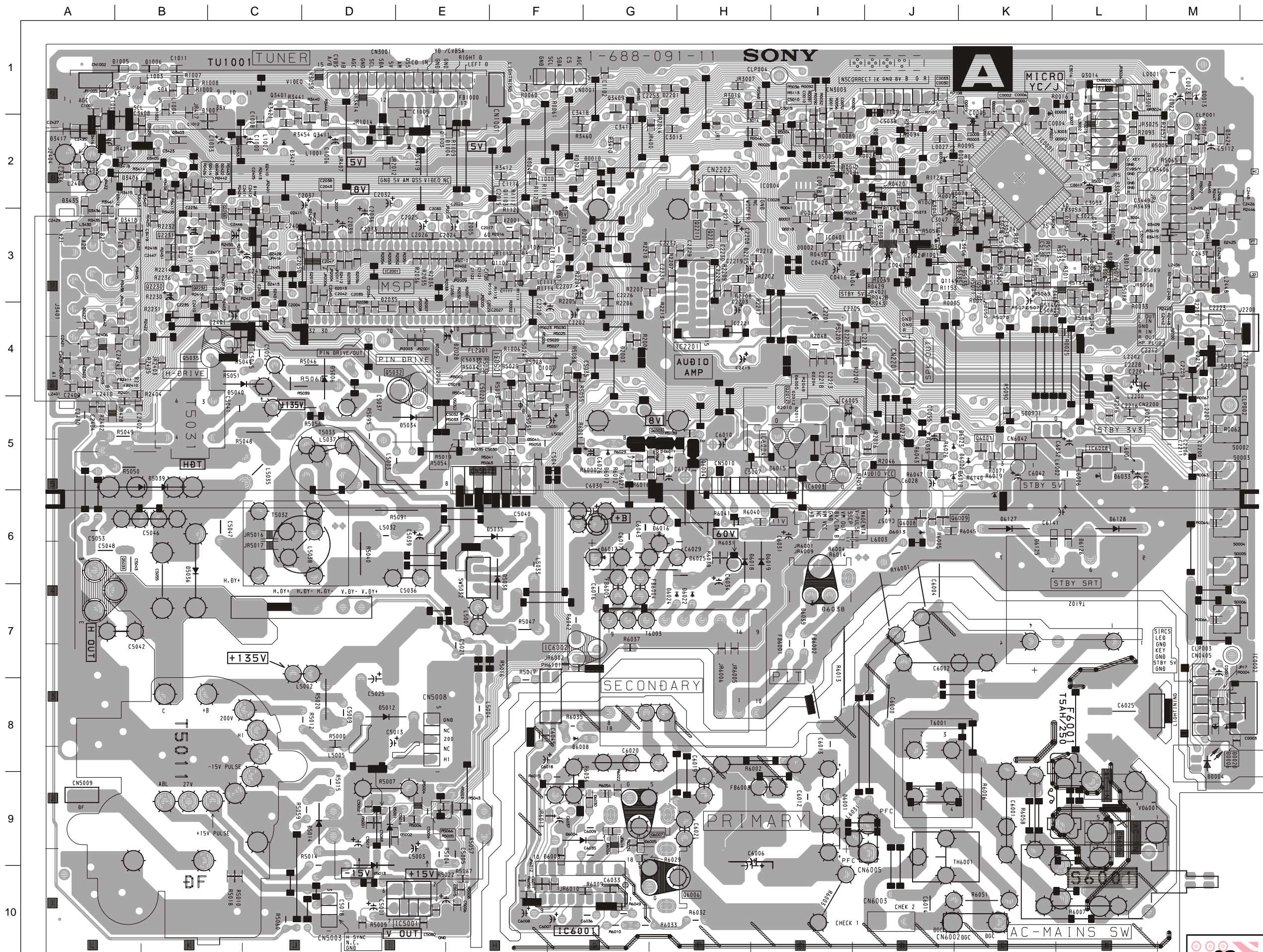
Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC0001	1	0	IC0001	67	4.3
	2	3.2		68	5.0
	3	5.0		69	5.0
	5	0		70	0
	6	3.5		71	3.5
	8	0		72	3.8
	9	0		73	2.5
	10	2.3		74	0.9
	12	5.0		75	7.2
	13	2.6		76	3.4
	14	4.0		77	3.8
	16	4.0		78	3.2
	17	4.7		79	4.8
	18	1.1		80	0
	19	1.3	IC5001	1	0.4
	20	3.8		3	-11.8
	21	3.8		5	0.3
	22	0		6	13.5
	26	1.2	IC5031	7	0.4
	28	3.5		1	1.4
	29	7.9		2	1.9
	30	2.6		3	1.8
	31	7.9	IC5031	5	3.6
	32	3.3		6	1.4
	34	3.3		7	7.1
	35	1.4	IC6001	1	-75.5
	36	0		2	-76.1
	38	1.4		3	-75.5
	40	1.8		4	-75.8
	42	7.4		5	-77.1
	43	7.4		6	-77.0
	45	2.4		7	-73.6
	46	2.8		9	-77.0
	47	2.8		10	-71.4
	48	2.4		11	-77.1
	49	2.4		12	-74.7
	50	0		14	4.1
	51	2.5		15	0
	52	2.5		16	0
	53	2.5		18	77.1
	54	2.8	IC2201	1	13
	55	3.8		3	0
	56	1.8		5	13.0
	57	1.8		6	0
	58	1.8		7	13.5
	59	3.2		9	0
	62	0		10	5.6
	63	1.7		12	13.5
	64	1.6		14	13.5
	65	0			

~ A Board Waveforms ~



~ A Board Semiconductor Voltage Table ~

Ref	(e)	(b)	(c)	Ref	(e)	(b)	(c)
Q0013	0	0.4	3.1	Q6003	8	8	0
Q1102	4.0	3.3	8.0	Q6004	0	0	3.1
Q1103	4.0	4.6	8.0	Q6008	0	0	8.9
Q2012	0	0.6	0	Q6009	8.9	8.9	0
Q3401	4.9	4.3	2.2	Ref	(s)	(g)	(d)
Q3411	1.3	1.9	4.3	Q6006	0	0	75.6
Q6001	9.1	8.3	7.8	Q6007	-77.1	-74.7	0
Q6002	0	0.5	8	Q5035	0	3.0	82.1



~ A Board Semiconductor Location Table ~

DIODE		D6008	F - 8
D0001	I - 2	D6010	J - 5
D0002	I - 3	D6011	G - 5
D0003	K - 2	D6012	G - 5
D0004	M - 8	D6013	J - 6
D0006	M - 8	D6018	H - 6
D0007	K - 1	D6019	H - 6
D0008	L - 3	D6021	K - 6
D0010	G - 2	D6023	J - 5
D0011	F - 2	D6025	K - 6
D0013	M - 1	D6033	L - 5
D0014	K - 1	D6038	I - 6
D0018	I - 3	D6125	K - 6
D0020	M - 8	D6126	L - 6
D0022	L - 2	TRANSISTOR	
D0404	I - 3	Q0013	I - 3
D0408	B - 2	Q1102	E - 3
D0427	A - 4	Q1103	F - 3
D0442	B - 2	Q1149	J - 3
D1001	B - 1	Q2012	I - 5
D1007	A - 1	Q3401	C - 1
D2003	G - 4	Q3409	G - 1
D2007	F - 3	Q3411	D - 2
D2010	I - 5	Q5032	D - 4
D2011	I - 5	Q5033	A - 6
D2012	I - 5	Q5035	B - 4
D2035	D - 4	Q5070	K - 3
D2036	D - 3	Q5076	L - 3
D2204	I - 5	Q6001	K - 5
D3005	L - 3	Q6002	G - 5
D3403	B - 2	Q6003	G - 5
D3420	B - 2	Q6004	H - 5
D3424	M - 2	Q6006	G - 10
D3435	A - 2	Q6007	G - 9
D5001	D - 9	Q6008	J - 6
D5002	D - 9	Q6009	J - 6
D5003		IC'S	
D5004	I - 2	IC0001	K - 2
D5012	D - 8	IC0002	M - 8
D5013	D - 9	IC0004	H - 2
D5014	D - 9	IC0401	I - 3
D5034	E - 5	IC2001	E - 3
D5036	B - 6	IC2201	H - 4
D5037	C - 4	IC5001	E - 10
D5038	E - 6	IC5031	F - 4
D5039	B - 5	IC6001	F - 10
D5041	F - 5	IC6002	F - 7
D5073	F - 5	IC6003	I - 5
D6001	I - 9	IC6004	H - 5
D6002	J - 5	IC6005	K - 5
D6004	F - 9	IC6008	L - 5

~ A Printed Wiring Board Conductor side ~

NOTE:
Portions of the circuit marked as shown are high voltage areas. Use care to prevent electric shock during inspection or repair.

A B C D E F G H I J K L M N

1

2

3

4

5

6

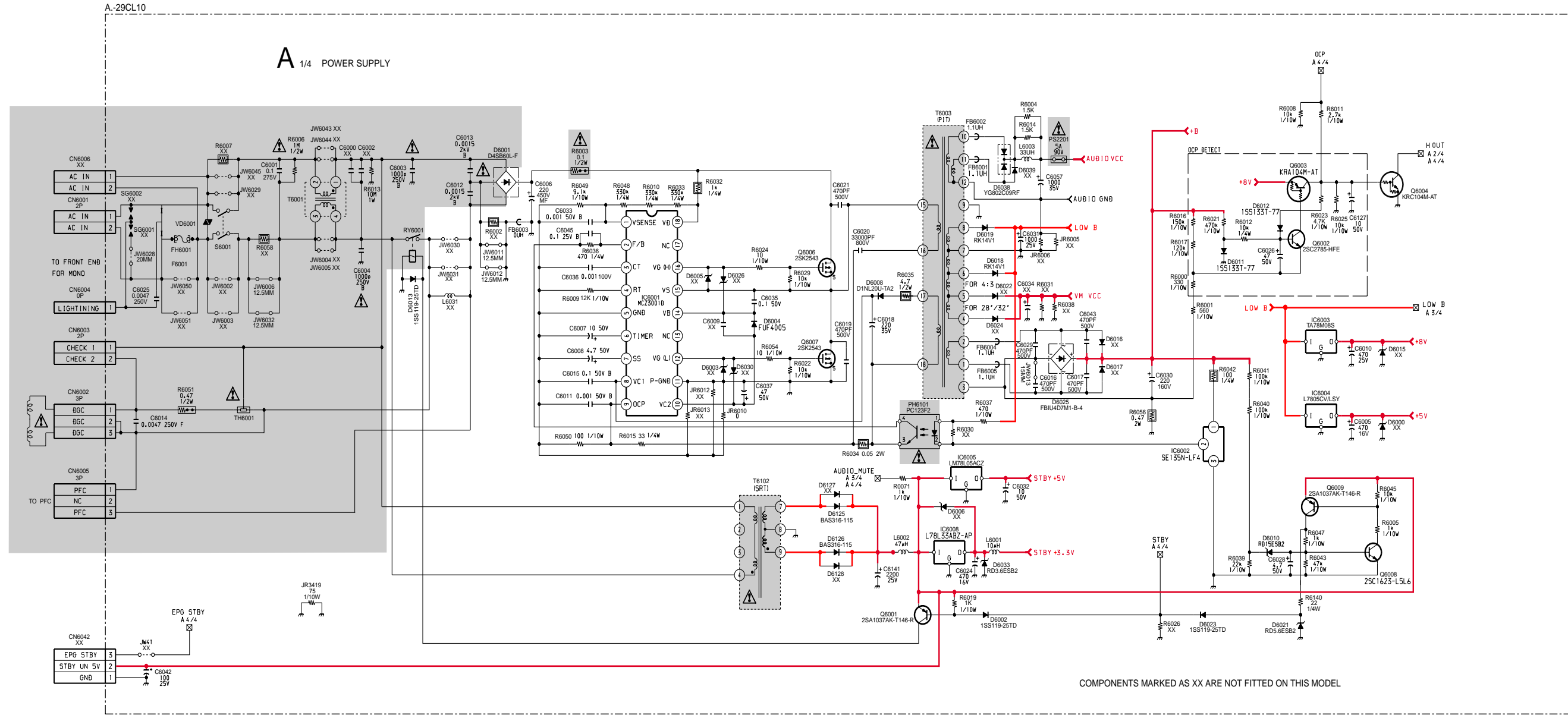
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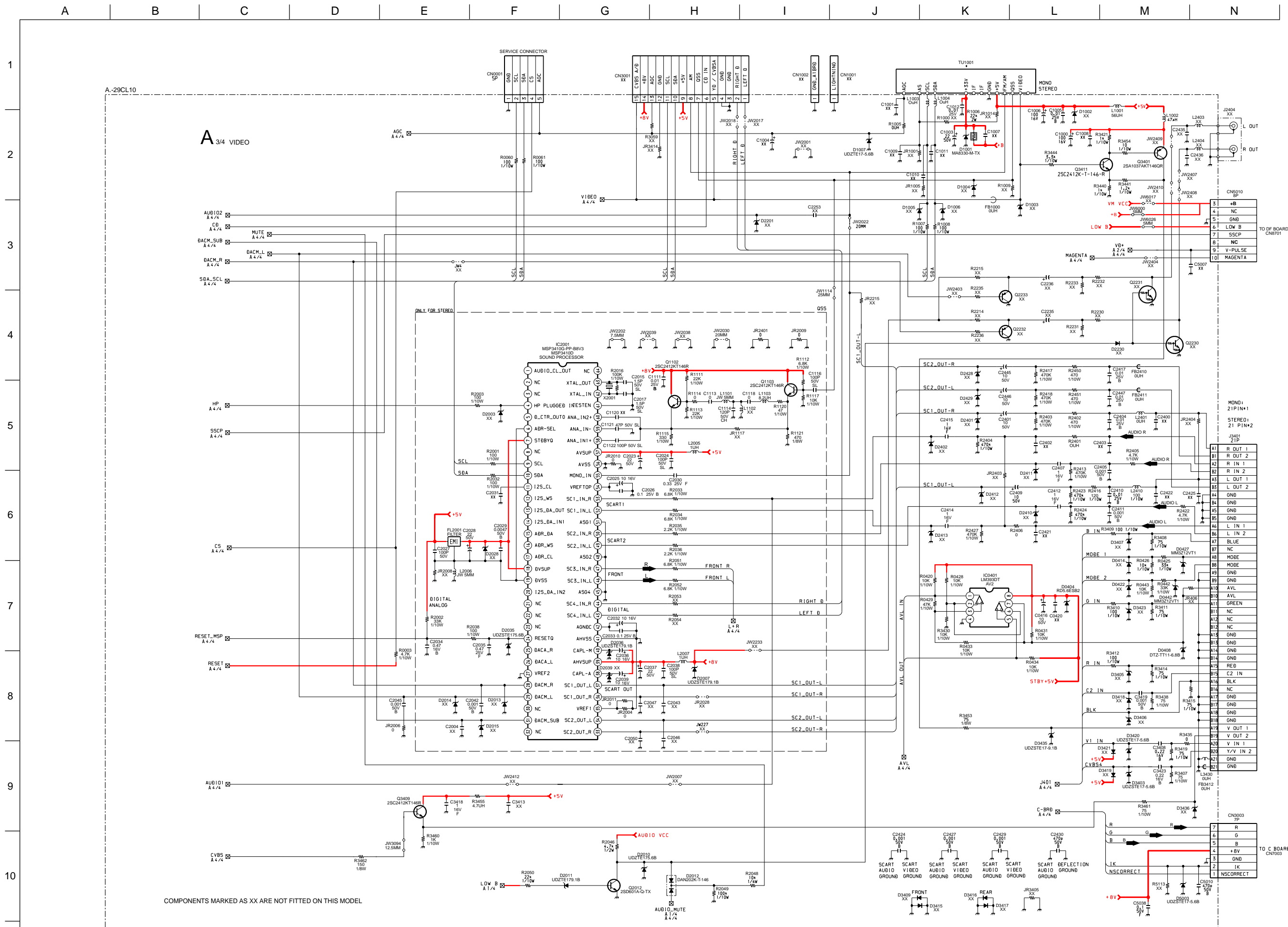
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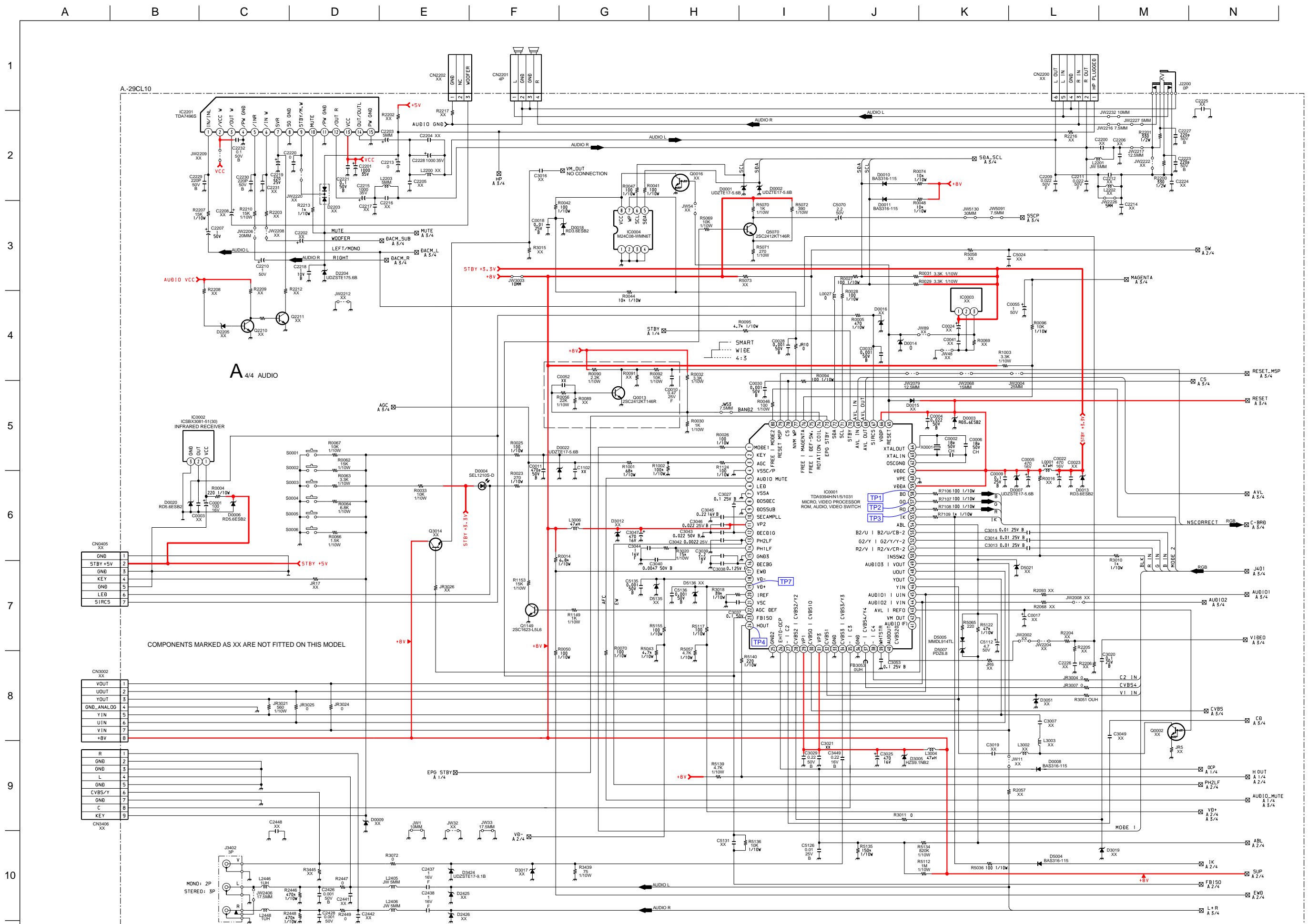
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10

11

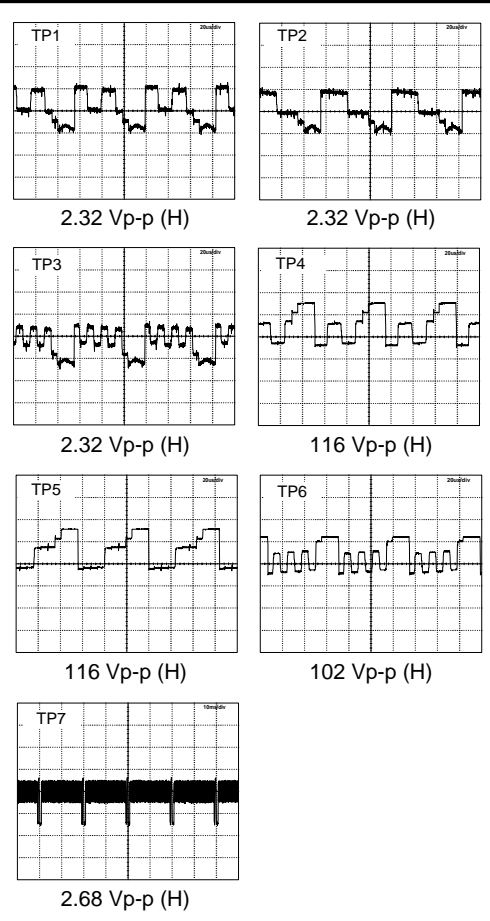
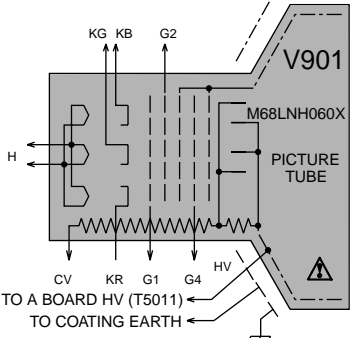
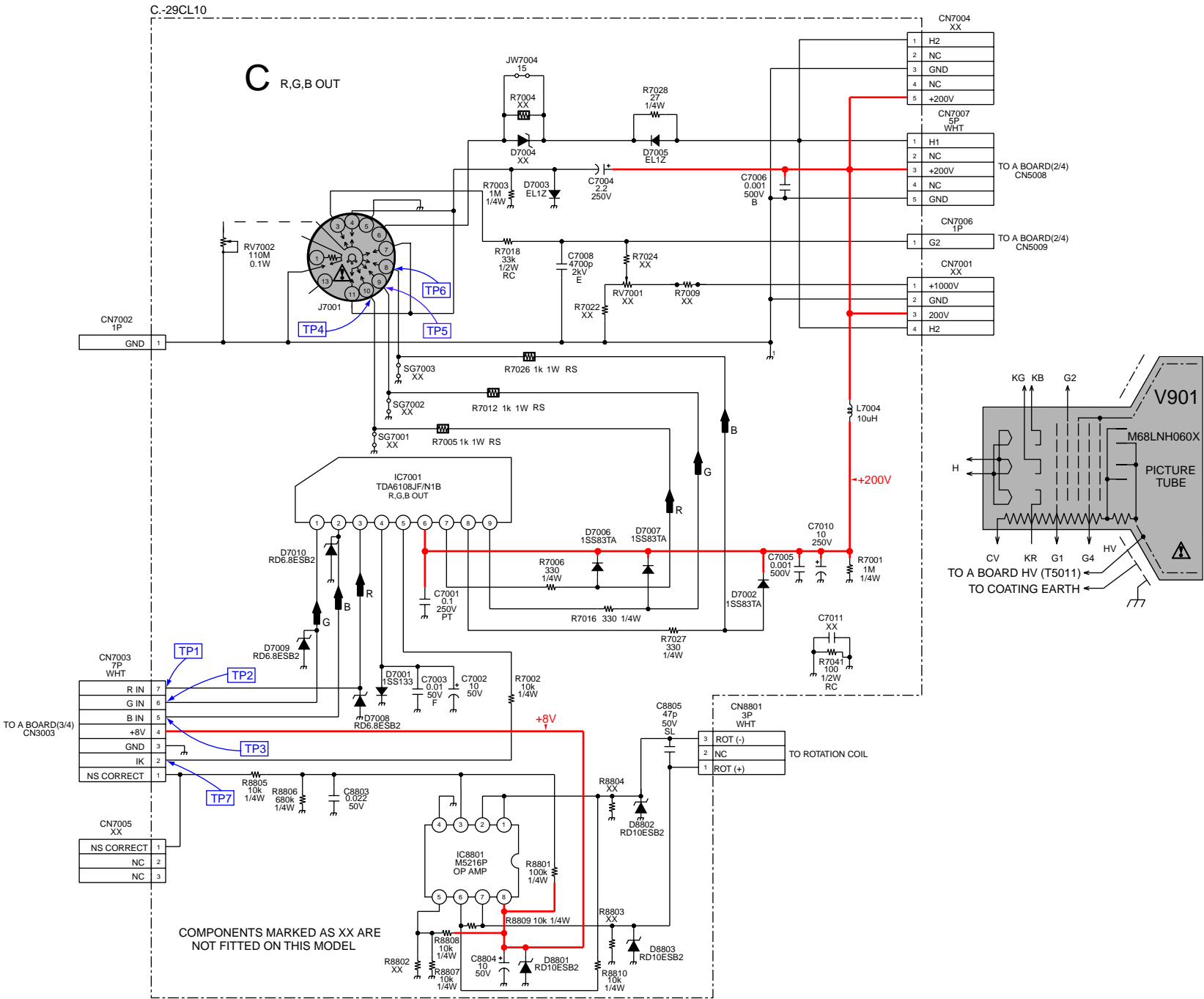




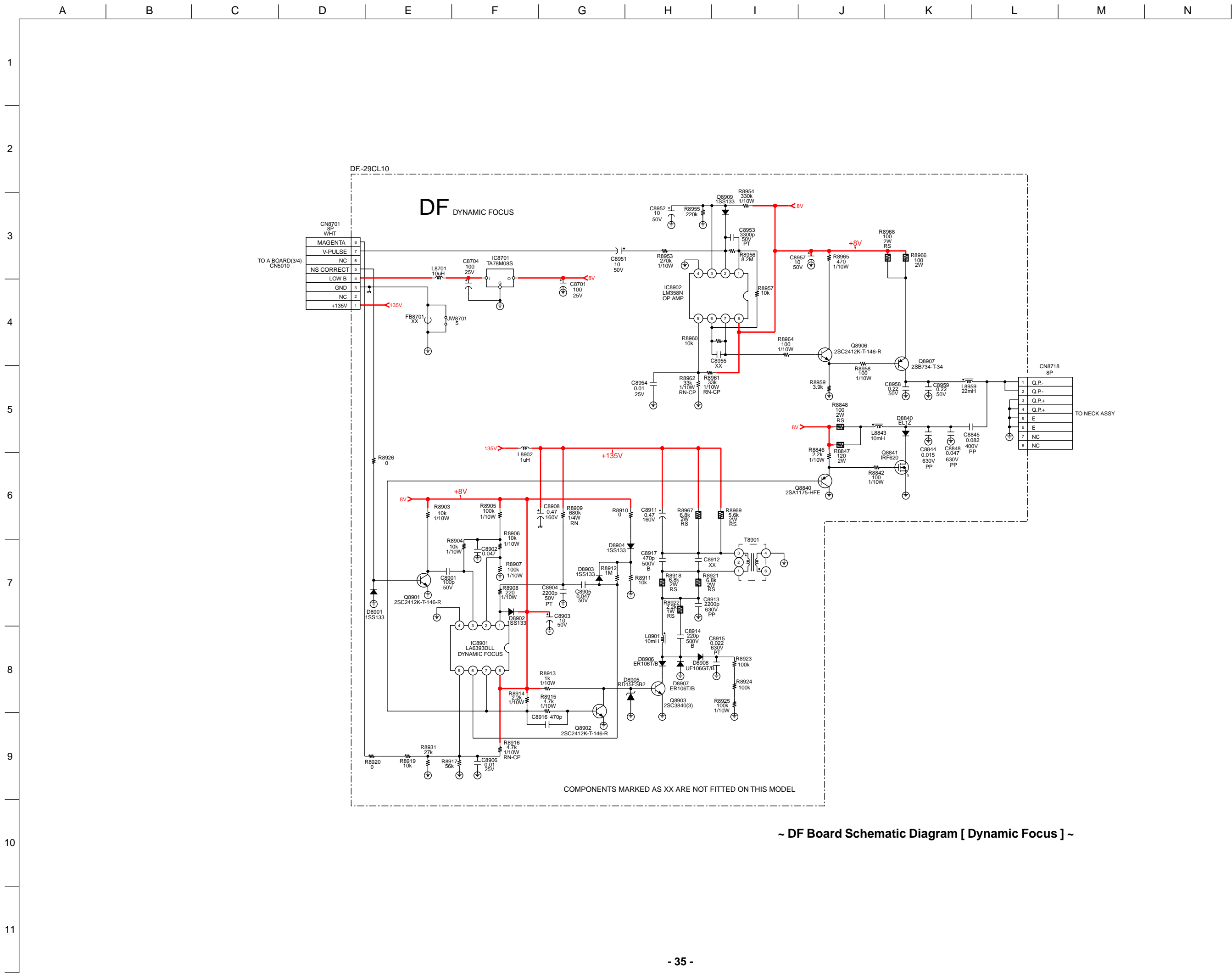


Ref	Anode	Cathode	Ref	Anode	Cathode	Ref	Anode	Cathode
D7001	0.7	0	D7006	183.5	194.5	D7010	0	1.9
D7002	182.2	194.5	D7007	180.1	194.5	D8801	0	8.0
D7003	0	0	D7008	0	1.9	D8802	0	3.8
D7005	0	0.7	D7009	0	1.9	D8803	0	4.2

Ref No	Pin No	Voltage (V)	Ref No	Pin No	Voltage (V)
IC7001	1	1.9	IC8801	1	3.8
	2	1.9		2	3.8
	3	1.8		3	3.8
	4	0.7		4	0
	5	3.5		5	4.0
	6	194.6		6	4.0
	7	184.2		7	4.2
	8	184.1		8	8.0
	9	182.4			

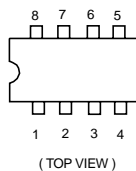


~ C Board Schematic Diagram [R-G-B Out] ~

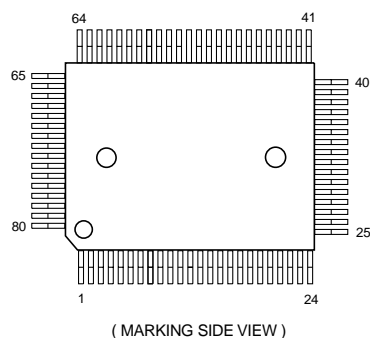


5-4. SEMICONDUCTORS

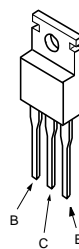
LM358N
LM393DT
LM393N
M5216P
TDA2822M
TEA2124



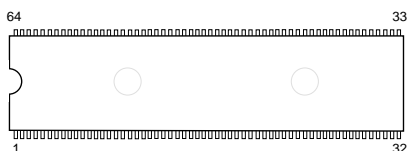
TDA9394H



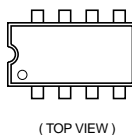
IRF614-005
IRF614-037
IRF620



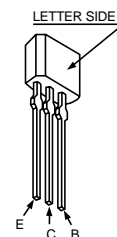
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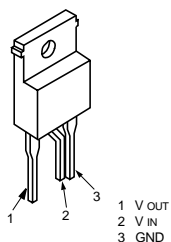
TOP209P



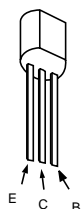
2SA933AS-QT
2SAG33ASQT
2SA933AS-RT
2SC1740S-RT
2SC2785-HFE



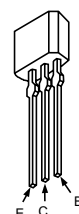
SE-135N
SE135N-LF4



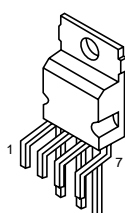
BF421-AMMO
2SA1091-O



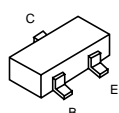
2SC2785-HFE



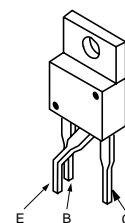
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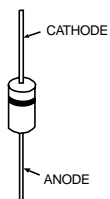
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DTA144ESA
DTC114ESA
DTC114EKA-T146
DTC143TKA-T146
DTC144EKA-T-146R
R2SA1162-G
2SA1037AK-T146
2SC1623-L5L6
2SD601A-Q-TX
2SC1623-L5-L6
2SC2412K-QR
2SC2412K-T-146-QR



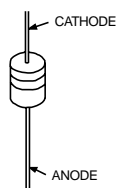
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2SK2251-01-F19
2SK2640-01MR



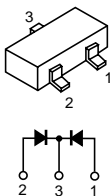
AK04-V1
 AU-01Z-V1
 BYD33G
 BYD33G-AMMO
 DINL20-TA
 D1NL20U
 DINL40-TA2
 ERB44-06TP1
 EGP20G
 EG-1Z-V1
 EL1Z
 ERD28-06S
 ERD28-06S
 ERC06-15S
 FMN-G12S
 GP08D
 RGP10GPKG23
 RG15GPKG23
 RG1CLF-B1
 RU-3AM
 RU3YX-LF-C4
 RU3YX-V1
 RU-4AM-T3
 1SS292T-77



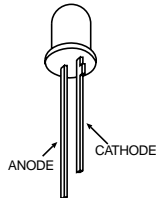
ERA38-06
 ERA81-004TP1
 ERA83-006
 MTZJ-3.6A
 MTZJ-T-77-2.2A
 HZS9.1NB2
 MTZJ-T-77-3.6B
 MTZJ-4.7C
 MTZJ-T-77-5.1B
 MTZJ-T-77-5.6B
 MTZJ-T-77-6.8A
 MTZJ-T-77-8.2B
 MTZJ-7.5B
 MTZJ-T-77-9.1A
 MTZJ-T-77-9.1B
 MTZJ-T-77-10
 MTZJ-T-72-10A
 MTZJ-T-72-10B
 MTZJ-T-77-15B
 MTZJ-T-77-33A
 MTZJ-33C
 MTZJ-7.5B
 P6KE200ASY
 RD3.6ES-B2
 RD3.9ES-B2
 RD5.1ESB2
 RD5.6ESB2
 RD6.8ES-B2
 RD7.5ESB2
 RD9.1ES-B3
 RD10ESB2
 RD15ESB2
 1SS119-25
 1SS133T-77



DAN202K
 DAN202K-T146
 MA8330-TX
 DTZ33B

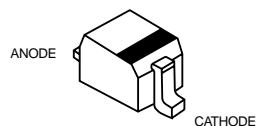
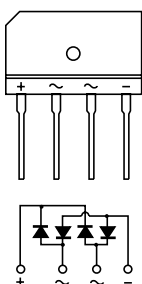


SLA-570KT3F

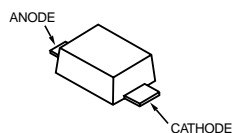


1SS355TE-17
 DTZ-TT11-6.8B
 RD12SB2
 UDZS-TE-17-4.7B
 UDZSTE-175.6B
 UDZS-TE-17-6.8B
 UDZSTE-179.1B
 UDZ-TE-17-22B

D4SB60L

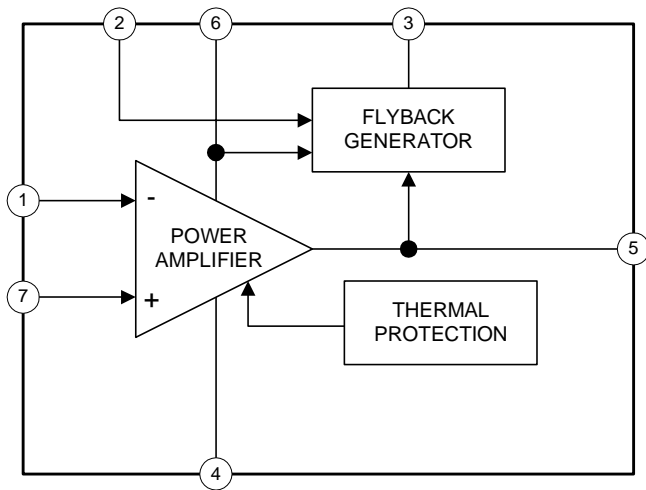


UF4005PKG23

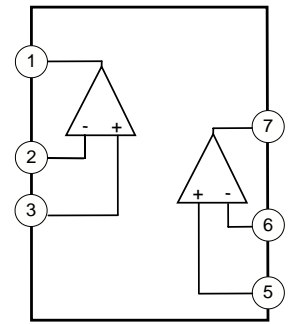


5-5 IC BLOCK DIAGRAMS

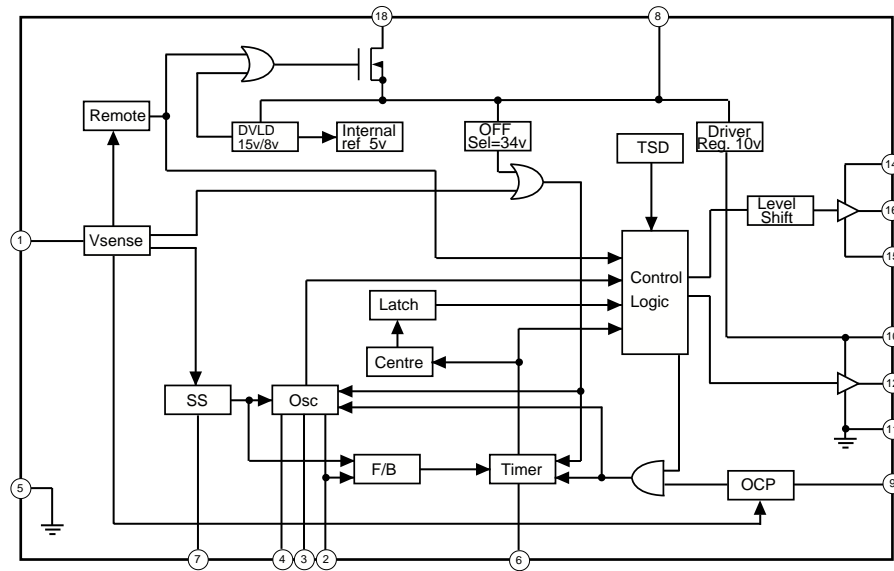
A BOARD IC5001 STV9379A



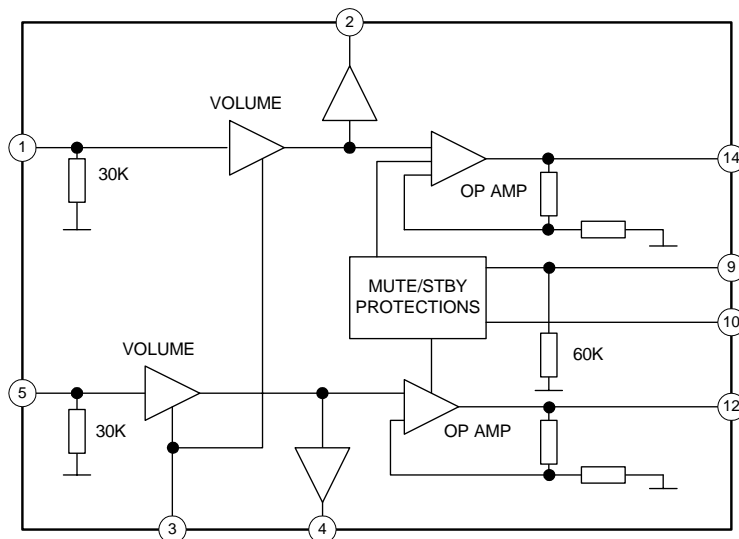
A BOARD IC0401/IC5031 LM393DT



A BOARD IC6001 MCZ3001D



A BOARD IC2201 TDA7496S



SECTION 6 EXPLODED VIEWS

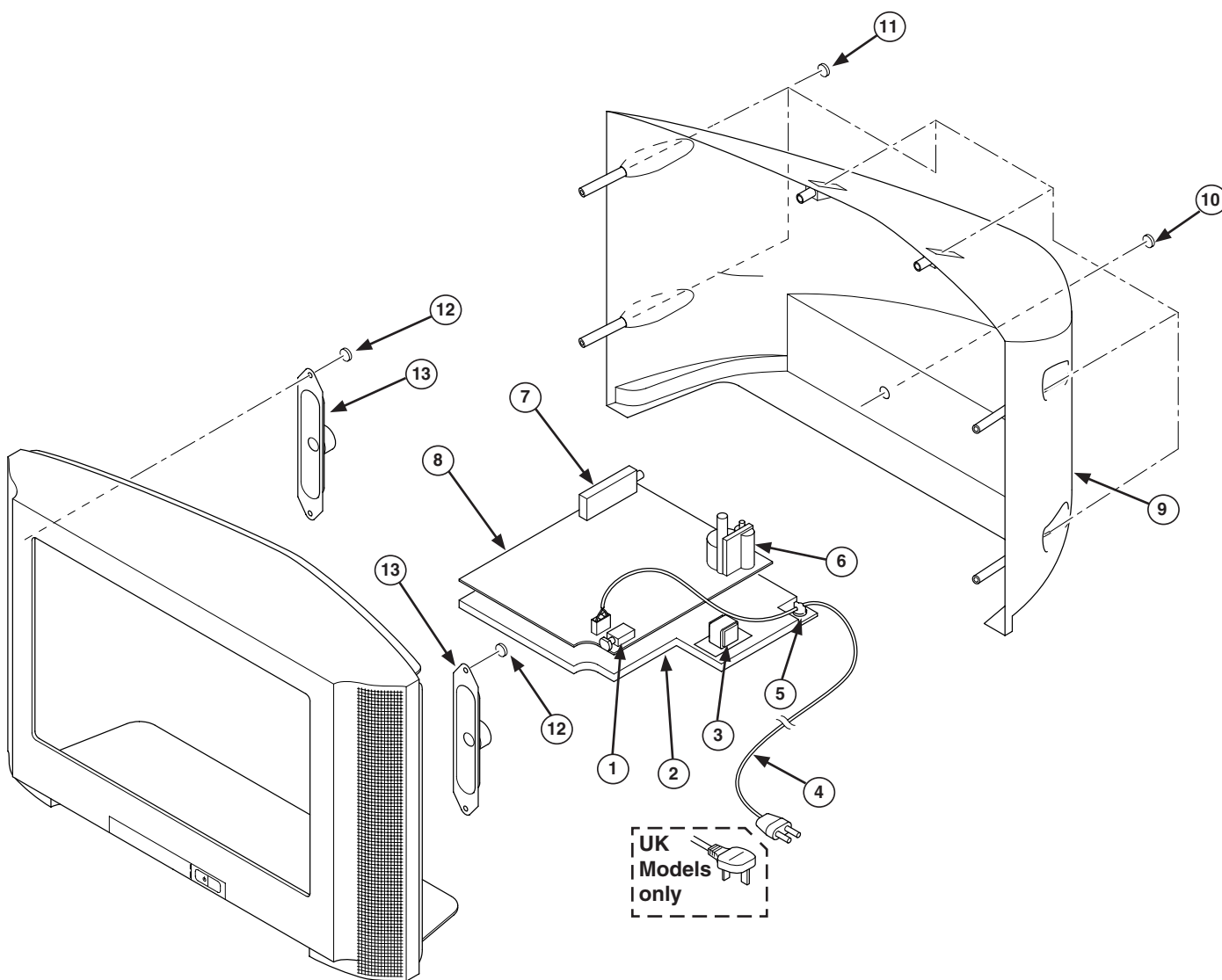
NOTE :

- Items with no part number and no description are not stocked because they are seldom required for routine service.
- The construction parts of an assembled part are indicated with a collation number in the remarks column.
- Items marked “*” are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.

Note : Les composants identifiés par une trame et par une marque Δ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces du numéro spécifié.

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

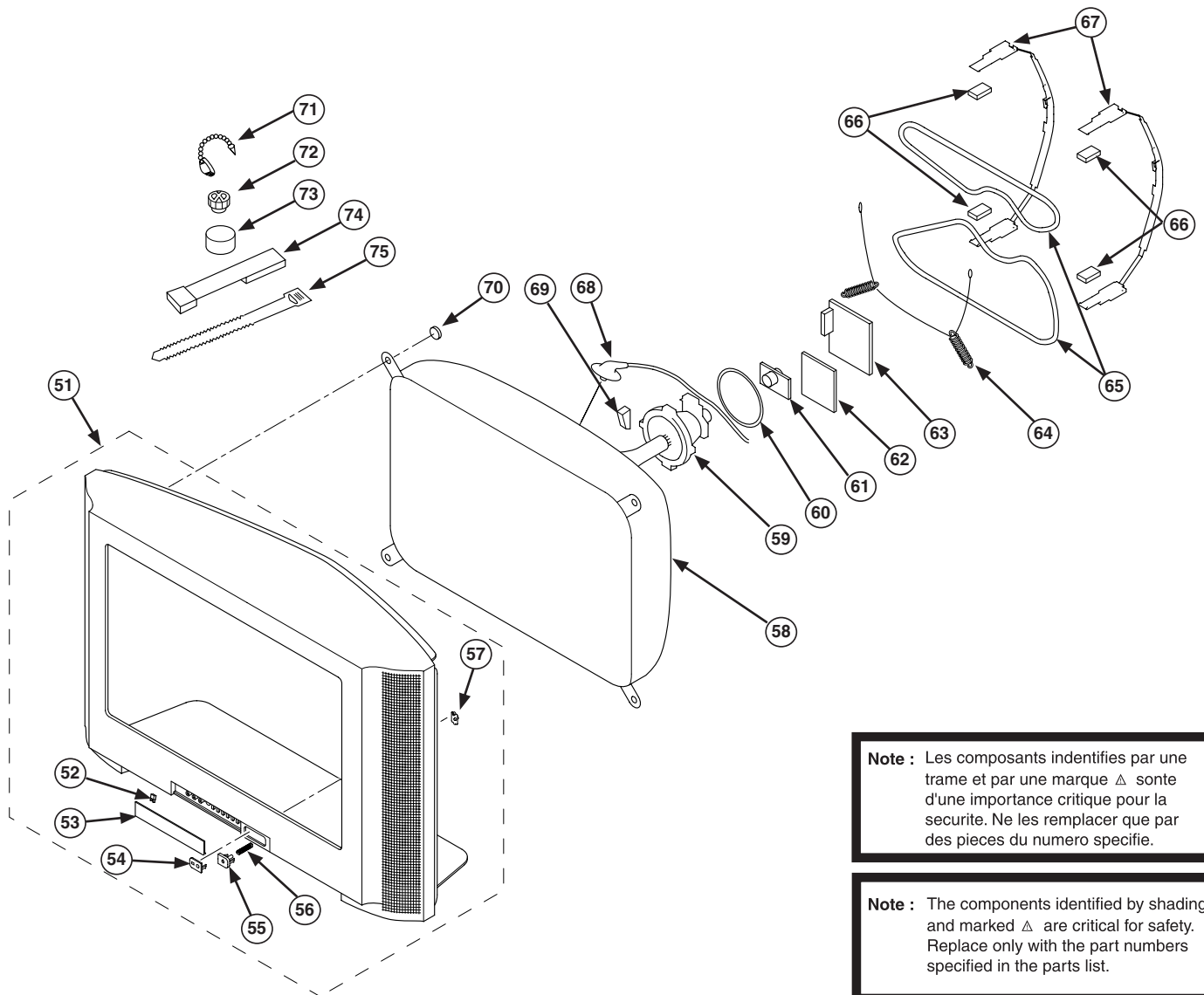
6-1. CHASSIS



REF.NO.	PART.NO	DESCRIPTION	REMARK
1	Δ 1-571-433-21	SWITCH, PUSH (AC POWER)	
2	*4-093-663-01	BRACKET, MAIN	
3	Δ 1-424-733-11	COIL, PFC CHOKE 65MMH	
4	Δ 1-823-715-11	CORD, POWER (KV-29CL10B/29CL10E/29CL10K)	
	1-776-860-11	POWER CORD, FILTER (UK) (KV-29CL10U)	
5	*4-202-531-01	AC CORD LOCK (SC)	
6	Δ 1-453-372-21	TRANSFORMER ASSY, FLYBACK (NX-4521//Z214)	
7	8-598-535-20	FRONTEND BTF-EF411 (KV-29CL10B)	
	8-598-533-10	FRONTEND BTF-EC411 (KV-29CL10E/29CL10K)	
	8-598-529-10	FRONTEND BTF-EU611 (KV-29CL10U)	

REF.NO.	PART.NO	DESCRIPTION	REMARK
8	*A-1302-131-A	A BOARD, COMPLETE (KV-29CL10B)	
	*A-1302-073-A	A BOARD, COMPLETE (KV-29CL10E/29CL10K)	
	*A-1302-132-A	A BOARD, COMPLETE (KV-29CL10U)	
9	*4-093-656-01	REAR COVER	
10	7-685-663-71	SCREW +BVTP 4X16 TYPE2 IT-3	
11	7-685-663-79	SCREW +BVTP 4X16 TYPE2 IT-3	
12	4-058-870-01	SCREW, (4X16) W(+) P TAPPING	
13	1-529-988-11	SPEAKER (4.2X24CM)	

6-2. PICTURE TUBE



Note : Les composants identifiés par une trame et par une marque Δ sont d'une importance critique pour la sécurité. Ne les remplacer que par des pièces du numéro spécifié.

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
51	*X-4041-348-1	BEZNET ASSY	52-57	64	4-369-318-21	SPRING, TENSION	
52	4-093-657-01	SPRING, DOOR		65	Δ 1-416-654-21	COIL, DEMAGNETIC	
53	4-093-660-01	DOOR, CONTROL		66	*4-203-390-11	CUSHION, DGC	
54	4-093-662-01	WINDOW, ORNAMENTAL		67	*4-204-768-01	HOLDER, DGC (29")	
55	4-093-659-01	BUTTON, POWER		68	Δ 1-251-946-21	CAP ASSY, HIGH VOLTAGE	
56	4-204-426-01	SPRING		69	3-704-495-01	SPACER, DY	
57	4-205-375-01	GUIDE LIGHT		70	4-046-765-12	SCREW, TAPPING 7+ CROWN WASHER	
58	Δ 8-735-097-05	PICTURE TUBE (M68LNH060X)		71	4-308-870-00	CLIP, LEAD WIRE	
59	Δ 8-451-494-51	DEFLECTION YOKE (Y29RSA-L)		72	1-452-094-00	MAGNET, ROTATABLE DISK; 15MM Ø	
60	1-452-896-11	COIL, NA ROTATION (RT200)		73	1-452-032-00	MAGNET, DISK; 10MM Ø	
61	Δ 8-453-011-11	NECK ASSEMBLY NA299-M		74	X-4387-214-1	PERMALLOY ASSY, CORRECTION	
62	*A-1302-075-A	DF BOARD, COMPLETE		75	3-701-007-00	BAND BINDING	
63	*A-1302-074-A	C BOARD, COMPLETE					

SECTION 7 ELECTRICAL PARTS LIST

PARTS LISTING TABLE OF CONTENTS

	<u>Page</u>
C BOARD COMPLETE Parts List :	42
DF BOARD COMPLETE Parts List :	42
A BOARD COMMON Parts List : Parts common to all models in this manual	43
A BOARD VARIANT Parts List : Parts that belong only to the model specified	
<u>Model</u>	
(KV-29CL10B) :	51
(KV-29CL10E) :	51
(KV-29CL10K/KV-29CL10K) :	51
(KV-29CL10U) :	51
MISCELLANEOUS :	51
ACCESSORIES AND PACKAGING MATERIALS :	51
REMOTE COMMANDER :	51

Note : Refer to the designated variant parts list when seeking a part indicated by an asterisk (*)
Parts indicated (XX) on the Schematic Diagram are not used in this model and therefore do not appear in the Parts List.

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

C

DF

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
* A-1302-074-A C Board, Complete				< RESISTOR >			
	4-382-854-01	SCREW (M3X8) , P, SW (+)		R7001	1-247-903-00	CARBON 1M 5% 1/4W	
< CAPACITOR >				R7002	1-249-429-11	CARBON 10K 5% 1/4W	
C7001	1-136-189-00	MYLAR 0.1UF 10.00% 250V		R7003	1-247-903-00	CARBON 1M 5% 1/4W	
C7002	1-126-964-11	ELECT 10UF 20.00% 50V		R7005	1-215-869-11	METAL OXIDE 1K 5% 1W	
C7003	1-101-004-00	CERAMIC 0.01UF 50V		R7006	1-249-411-11	CARBON 330 5% 1/4W	
C7004	1-107-649-11	ELECT 2.2UF 20.00% 250V		R7012	1-215-869-11	METAL OXIDE 1K 5% 1W	
C7005	1-162-318-11	CERAMIC 0.001UF 10.00% 500V		R7016	1-249-411-11	CARBON 330 5% 1/4W	
C7006	1-162-318-11	CERAMIC 0.001UF 10.00% 500V		R7018	1-202-814-11	SOLID 33K 10% 1/2W	
C7008	1-115-350-51	CERAMIC 0.0047UF 2KV		R7026	1-215-869-11	METAL OXIDE 1K 5% 1W	
C7010	1-107-652-11	ELECT 10UF 20.00% 250V		R7027	1-249-411-11	CARBON 330 5% 1/4W	
C8803	1-101-005-00	CERAMIC 0.022UF 50V		R7028	1-249-398-11	CARBON 27 5% 1/4W	
C8804	1-126-964-11	ELECT 10UF 20.00% 50V		R7041	1-202-549-00	SOLID 100 20% 1/2W	
C8805	1-101-880-00	CERAMIC 47PF 5.00% 50V		R8801	1-249-441-11	CARBON 100K 5% 1/4W	
< CONNECTOR >				R8805	1-249-429-11	CARBON 10K 5% 1/4W	
CN7002	1-695-915-11	TAB (CONTACT)		R8806	1-247-899-11	CARBON 680K 5% 1/4W	
CN7003	*1-816-978-51	PLUG, CONNECTOR 7P		R8807	1-249-429-11	CARBON 10K 5% 1/4W	
CN7006	1-695-915-11	TAB (CONTACT)		R8808	1-249-429-11	CARBON 10K 5% 1/4W	
CN7007	*1-816-976-51	PLUG, CONNECTOR 5P		R8809	1-249-429-11	CARBON 10K 5% 1/4W	
CN8801	*1-816-974-51	PLUG, CONNECTOR 3P		R8810	1-249-429-11	CARBON 10K 5% 1/4W	
< DIODE >				< RESISTOR VARIABLE >			
D7001	8-719-991-33	DIODE 1SS133T-77		RV7002	1-241-656-21	RES, ADJ, METAL FILM 110M	
D7002	8-719-901-83	DIODE 1SS83		* A-1302-075-A DF Board, Complete			
D7003	8-719-302-43	DIODE EL1Z		< CAPACITOR >			
D7005	8-719-302-43	DIODE EL1Z		C8701	1-104-665-11	ELECT 100UF 20.00% 25V	
D7006	8-719-901-83	DIODE 1SS83		C8704	1-104-665-11	ELECT 100UF 20.00% 25V	
D7007	8-719-901-83	DIODE 1SS83		C8844	1-100-146-11	FILM 0.015UF 5% 630V	
D7008	8-719-109-97	DIODE RD6.8ESB2		C8845	1-129-725-00	FILM 0.082UF 5.00% 400V	
D7009	8-719-109-97	DIODE RD6.8ESB2		C8848	1-100-143-11	FILM 0.047UF 5% 630V	
D7010	8-719-109-97	DIODE RD6.8ESB2		C8901	1-162-927-11	CERAMIC CHIP 100PF 5.00% 50V	
D8801	8-719-110-17	DIODE RD10ESB2		C8902	1-137-374-11	MYLAR 0.047UF 5.00% 50V	
D8802	8-719-110-17	DIODE RD10ESB2		C8903	1-126-964-11	ELECT 10UF 20.00% 50V	
D8803	8-719-110-17	DIODE RD10ESB2		C8904	1-130-475-00	MYLAR 0.0022UF 5.00% 50V	
< IC >				C8905	1-137-374-11	MYLAR 0.047UF 5.00% 50V	
IC7001	8-759-562-43	IC TDA6108JF/N1B		C8906	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V	
IC8801	8-759-603-37	IC M5216P		C8908	1-109-954-11	ELECT 0.47UF 20.00% 160V	
< SOCKET >				C8911	1-109-954-11	ELECT 0.47UF 20.00% 160V	
J7001 Δ	1-251-732-11	SOCKET, CRT		C8913	1-129-992-00	FILM 0.0024UF 5.00% 630V	
< COIL >				C8914	1-102-244-00	CERAMIC 220PF 10.00% 500V	
L7004	1-414-183-41	INDUCTOR 10UH		C8915	1-136-205-11	MYLAR 0.022UF 5.00% 630V	
				C8916	1-162-962-11	CERAMIC CHIP 470PF 10.00% 50V	
				C8917	1-102-228-00	CERAMIC 470PF 10.00% 500V	
				C8951	1-126-964-11	ELECT 10UF 20.00% 50V	
				C8952	1-126-964-11	ELECT 10UF 20.00% 50V	
				C8953	1-137-367-11	MYLAR 0.0033UF 5.00% 50V	
				C8954	1-162-970-11	CERAMIC CHIP 0.01UF 10.00% 25V	

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
C8957	1-126-964-11	ELECT	10UF 20.00% 50V	R8907	1-216-097-11	RES-CHIP	100K 5% 1/10W
C8958	1-136-169-00	FILM	0.22UF 5.00% 50V	R8908	1-216-033-00	RES-CHIP	220 5% 1/10W
C8959	1-136-169-00	FILM	0.22UF 5.00% 50V	R8909	1-215-489-00	METAL	680K 1% 1/4W
< CONNECTOR >				R8910	1-216-295-91	SHORT CHIP	0
CN8701	1-816-979-511	PIN, CONNECTOR (PC BOARD)	8P	R8911	1-216-073-91	RES-CHIP	10K 5% 1/10W
CN8718	*1-770-723-11	CONNECTOR, BOARD TO BOARD	8P	R8912	1-216-121-11	RES-CHIP	1M 5% 1/10W
< DIODE >				R8913	1-216-049-11	RES-CHIP	1K 5% 1/10W
D8840	8-719-302-43	DIODE EL1Z		R8914	1-216-057-00	RES-CHIP	2.2K 5% 1/10W
D8901	8-719-991-33	DIODE 1SS133T-77		R8915	1-216-065-91	RES-CHIP	4.7K 5% 1/10W
D8902	8-719-991-33	DIODE 1SS133T-77		R8916	1-216-667-11	METAL CHIP	4.7K 0.5% 1/10W
D8903	8-719-991-33	DIODE 1SS133T-77		R8917	1-216-693-11	METAL CHIP	56K 0.5% 1/10W
D8904	8-719-991-33	DIODE 1SS133T-77		R8918	1-215-897-11	METAL OXIDE	6.8K 5% 2W
D8905	8-719-110-41	DIODE RD15ESB2		R8919	1-216-675-91	METAL CHIP	10K 0.5% 1/10W
D8906	6-500-105-01	DIODE ER106T/B		R8920	1-216-295-91	SHORT CHIP	0
D8907	6-500-105-01	DIODE ER106T/B		R8921	1-215-897-11	METAL OXIDE	6.8K 5% 2W
D8908	6-500-126-01	DIODE UF106GT/B		R8922	1-215-871-11	METAL OXIDE	2.2K 5% 1W
D8909	8-719-991-33	DIODE 1SS133T-77		R8923	1-216-097-11	RES-CHIP	100K 5% 1/10W
< IC >				R8924	1-216-097-11	RES-CHIP	100K 5% 1/10W
IC8701	6-702-992-01	IC TA78M08S		R8925	1-216-097-11	RES-CHIP	100K 5% 1/10W
IC8901	8-759-659-67	IC LA6393DLL		R8926	1-216-295-91	SHORT CHIP	0
IC8902	6-701-625-01	IC LM358N		R8931	1-216-083-00	RES-CHIP	27K 5% 1/10W
< COIL >				R8953	1-216-107-00	RES-CHIP	270K 5% 1/10W
L8701	1-414-183-41	INDUCTOR	10UH	R8954	1-216-109-00	RES-CHIP	330K 5% 1/10W
L8843	1-406-989-21	INDUCTOR	10MH	R8955	1-216-105-91	RES-CHIP	220K 5% 1/10W
L8901	1-406-677-11	INDUCTOR	10MH	R8956	1-218-463-11	RES-CHIP	8.2M 5% 1/10W
L8902	1-414-177-11	INDUCTOR	1UH	R8957	1-216-073-91	RES-CHIP	10K 5% 1/10W
L8959	1-406-679-11	INDUCTOR	22MH	R8958	1-216-025-11	RES-CHIP	100 5% 1/10W
< TRANSISTOR >				R8959	1-216-063-91	RES-CHIP	3.9K 5% 1/10W
Q8840	8-729-119-76	TRANSISTOR 2SA1175-HFE		R8960	1-216-073-91	RES-CHIP	10K 5% 1/10W
Q8841	8-729-926-76	TRANSISTOR IRF620		R8961	1-216-687-11	METAL CHIP	33K 0.5% 1/10W
Q8901	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R8962	1-216-687-11	METAL CHIP	33K 0.5% 1/10W
Q8902	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R8964	1-216-025-11	RES-CHIP	100 5% 1/10W
Q8903	8-729-043-95	TRANSISTOR 2SC3840(3)		R8965	1-216-041-00	RES-CHIP	470 5% 1/10W
Q8906	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R		R8966	1-215-886-11	METAL OXIDE	100 5% 2W
Q8907	8-729-140-97	TRANSISTOR 2SB734-34		R8967	1-215-897-11	METAL OXIDE	6.8K 5% 2W
< RESISTOR >				R8968	1-215-886-11	METAL OXIDE	100 5% 2W
R8842	1-216-025-11	RES-CHIP	100 5% 1/10W	R8969	1-216-461-00	METAL OXIDE	5.6K 5% 2W
R8846	1-216-057-00	RES-CHIP	2.2K 5% 1/10W	< TRANSFORMER >			
R8847	1-216-451-11	METAL OXIDE	120 5% 2W	T8901	1-437-837-11	FERRITE TRANSFORMER (DFT)	
R8848	1-215-886-11	METAL OXIDE	100 5% 2W	* A-1302-131-A A Board, Complete (KV-29CL10B) * A-1302-073-A A Board, Complete (KV-29CL10E/ KV-29CL10K) * A-1302-132-A A Board, Complete (KV-29CL10U)			
R8903	1-216-073-91	RES-CHIP	10K 5% 1/10W	A Board Common Parts			
R8904	1-216-073-91	RES-CHIP	10K 5% 1/10W	4-206-220-01	HOLDER, LED		
R8905	1-216-097-11	RES-CHIP	100K 5% 1/10W	4-382-854-01	SCREW (M3X8), P, SW (+)		
R8906	1-216-073-91	RES-CHIP	10K 5% 1/10W	4-382-854-01	SCREW (M3X8), P, SW (+)		

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
< CAPACITOR >				C2203	1-535-303-00	LEAD, JUMPER (5.0MM)	
C0001	1-126-933-11	ELECT 100UF	20.00% 16V	C2207	1-126-960-11	ELECT 1UF	20.00% 50V
C0002	1-163-233-91	CERAMIC CHIP 18PF	5.00% 50V	C2209	1-163-033-91	CERAMIC CHIP 0.022UF	50V
C0004	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V	C2210	1-126-960-11	ELECT 1UF	20.00% 50V
C0005	1-126-935-11	ELECT 470UF	20.00% 16V	C2211	1-163-033-91	CERAMIC CHIP 0.022UF	50V
C0006	1-163-233-91	CERAMIC CHIP 18PF	5.00% 50V	C2213	1-216-295-91	SHORT CHIP 0	
C0009	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	C2215	1-126-952-11	ELECT 1000UF	20.00% 35V
C0010	1-164-005-11	CERAMIC CHIP 0.47UF	25V	C2218	1-109-982-11	CERAMIC CHIP 1UF	10.00% 10V
C0011	1-163-005-91	CERAMIC CHIP 470PF	10.00% 50V	C2219	1-104-666-11	ELECT 220UF	20.00% 25V
C0018	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C2220	1-216-295-91	SHORT CHIP 0	
C0022	1-126-935-11	ELECT 470UF	20.00% 16V	C2221	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C0028	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V	C2223	1-163-001-11	CERAMIC CHIP 220PF	10.00% 50V
C0030	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V	C2227	1-163-001-11	CERAMIC CHIP 220PF	10.00% 50V
C0033	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V	C2228	1-126-952-11	ELECT 1000UF	20.00% 35V
C0055	1-126-960-11	ELECT 1UF	20.00% 50V	C2229	1-163-001-11	CERAMIC CHIP 220PF	10.00% 50V
C0416	1-126-964-11	ELECT 10UF	20.00% 50V	C2230	1-163-001-11	CERAMIC CHIP 220PF	10.00% 50V
C1000	1-126-933-11	ELECT 100UF	20.00% 16V	C2232	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C1003	1-126-965-91	ELECT 22UF	20.00% 50V	C2401	1-126-964-11	ELECT 10UF	20.00% 50V
C1005	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C2404	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C1006	1-126-933-11	ELECT 100UF	20.00% 16V	C2405	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C1012	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C2407	1-164-346-11	CERAMIC CHIP 1UF	16V
C1111	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C2409	1-126-964-11	ELECT 10UF	20.00% 50V
C1113	1-216-295-91	SHORT CHIP 0		C2410	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C1114	1-163-253-11	CERAMIC CHIP 120PF	5.00% 50V	C2411	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C1116	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V	C2412	1-164-346-11	CERAMIC CHIP 1UF	16V
C1118	1-216-295-91	SHORT CHIP 0		C2414	1-164-346-11	CERAMIC CHIP 1UF	16V
C1121	1-163-109-00	CERAMIC CHIP 47PF	5.00% 50V	C2415	1-164-346-11	CERAMIC CHIP 1UF	16V
C1122	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V	C2417	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C2015	1-163-084-00	CERAMIC CHIP 1.5PF	0.25PF 50V	C2424	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C2017	1-163-084-00	CERAMIC CHIP 1.5PF	0.25PF 50V	C2426	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C2023	1-126-965-91	ELECT 22UF	20.00% 50V	C2427	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C2024	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V	C2428	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C2025	1-126-157-11	ELECT 10UF	20.00% 16V	C2429	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C2026	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	C2430	1-102-114-00	CERAMIC 470PF	10.00% 50V
C2027	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V	C2437	1-164-346-11	CERAMIC CHIP 1UF	16V
C2028	1-126-965-91	ELECT 22UF	20.00% 50V	C2438	1-164-346-11	CERAMIC CHIP 1UF	16V
C2029	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V	C2445	1-126-964-11	ELECT 10UF	20.00% 50V
C2030	1-164-336-11	CERAMIC CHIP 0.33UF	25V	C2446	1-126-964-11	ELECT 10UF	20.00% 50V
C2032	1-126-157-11	ELECT 10UF	20.00% 16V	C2447	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C2033	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	C3013	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C2034	1-107-823-11	CERAMIC CHIP 0.47UF	10.00% 16V	C3014	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C2035	1-164-005-11	CERAMIC CHIP 0.47UF	25V	C3015	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C2036	1-126-157-11	ELECT 10UF	20.00% 16V	C3020	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2037	1-126-965-91	ELECT 22UF	20.00% 50V	C3025	1-126-935-11	ELECT 470UF	20.00% 16V
C2038	1-163-117-00	CERAMIC CHIP 100PF	5.00% 50V	C3027	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C2039	1-126-157-11	ELECT 10UF	20.00% 16V	C3029	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V
C2042	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V	C3037	1-136-244-11	FILM 0.1UF	2.00% 50V
C2045	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V	C3038	1-163-038-91	CERAMIC CHIP 0.1UF	25V
C2201	1-126-952-11	ELECT 1000UF	20.00% 35V	C3039	1-164-505-11	CERAMIC CHIP 2.2UF	16V
				C3040	1-163-017-00	CERAMIC CHIP 0.0047UF	10.00% 50V

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

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REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
C3042	1-162-625-11	CERAMIC CHIP 0.0047UF	5.00% 50V	C5080	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C3043	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V	C5082	1-163-255-11	CERAMIC CHIP 150PF	5.00% 50V
C3044	1-164-346-11	CERAMIC CHIP 1UF	16V	C5083	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C3045	1-164-489-11	CERAMIC CHIP 0.22UF	10.00% 16V	C5112	1-126-963-11	ELECT 4.7UF	20.00% 50V
C3046	1-164-227-11	CERAMIC CHIP 0.022UF	10.00% 25V	C5126	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V
C3047	1-126-935-11	ELECT 470UF	20.00% 16V	C5135	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C3053	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	C5136	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C3408	1-127-715-91	CERAMIC CHIP 0.22UF	10% 16V	C6001 Δ	1-137-999-11	FILM 0.1UF	275V
C3418	1-164-346-11	CERAMIC CHIP 1UF	16V	C6003 Δ	1-119-899-51	CERAMIC 1000PF	10.00% 250V
C3419	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V	C6004 Δ	1-119-899-51	CERAMIC 1000PF	10.00% 250V
C3423	1-127-715-91	CERAMIC CHIP 0.22UF	10% 16V	C6005	1-115-785-11	ELECT 470UF	20.00% 25V
C3449	1-127-715-91	CERAMIC CHIP 0.22UF	10% 16V	C6005	1-115-758-11	ELECT 470UF	20.00% 16V
C5001	1-126-968-11	ELECT 100UF	20.00% 50V	C6006	1-117-751-11	ELECT (BLOCK) 220UF	20.00% 450V
C5002	1-163-038-91	CERAMIC CHIP 0.1UF	25V	C6007	1-126-964-11	ELECT 10UF	20.00% 50V
C5003	1-126-968-11	ELECT 100UF	20.00% 50V	C6008	1-126-963-11	ELECT 4.7UF	20.00% 50V
C5004	1-106-220-00	MYLAR 0.1UF	10.00% 100V	C6010	1-126-941-11	ELECT 470UF	20.00% 25V
C5005	1-137-194-81	FILM 0.47UF	5.00% 50V	C6011	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C5006	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C6012 Δ	1-104-571-91	CERAMIC 0.0015UF	10.00% 2KV
C5008	1-163-035-00	CERAMIC CHIP 0.047UF	50V	C6013 Δ	1-104-571-91	CERAMIC 0.0015UF	10.00% 2KV
C5009	1-107-364-11	MYLAR 0.01UF	10.00% 200V	C6014 Δ	1-161-964-51	CERAMIC 0.0047UF	250V
C5010	1-163-005-91	CERAMIC CHIP 470PF	10.00% 50V	C6015	1-115-339-11	CERAMIC CHIP 0.1UF	10.00% 50V
C5013	1-107-662-11	ELECT 22UF	20.00% 350V	C6016	1-165-127-11	CERAMIC 470PF	10.00% 500V
C5015	1-104-666-11	ELECT 220UF	20.00% 25V	C6017	1-165-127-11	CERAMIC 470PF	10.00% 500V
C5017	1-115-781-11	ELECT 220UF	20.00% 25V	C6018	1-126-949-11	ELECT 220UF	20.00% 35V
C5018	1-106-375-12	MYLAR 0.022UF	5.00% 200V	C6019	1-165-127-51	CERAMIC 470PF	10.00% 500V
C5019	1-163-275-11	CERAMIC CHIP 0.001UF	5.00% 50V	C6020	1-137-990-22	FILM 33000PF	3% 800V
C5020	1-163-038-91	CERAMIC CHIP 0.1UF	25V	C6021	1-165-127-51	CERAMIC 470PF	10.00% 500V
C5022	1-130-495-00	MYLAR 0.1UF	5.00% 50V	C6024	1-126-935-11	ELECT 470UF	20.00% 16V
C5025	1-123-024-21	ELECT 33UF	160V	C6025 Δ	1-127-798-51	CERAMIC 4700PF	20.00% 250V
C5030	1-162-970-11	CERAMIC CHIP 0.01UF	10.00% 25V	C6026	1-126-967-11	ELECT 47UF	20.00% 50V
C5031	1-126-964-11	ELECT 10UF	20.00% 50V	C6028	1-126-963-11	ELECT 4.7UF	20.00% 50V
C5032	1-163-037-11	CERAMIC CHIP 0.022UF	10.00% 50V	C6029	1-165-127-11	CERAMIC 470PF	10.00% 500V
C5035	1-163-233-91	CERAMIC CHIP 18PF	5.00% 50V	C6030	1-107-641-11	ELECT 220UF	20.00% 160V
C5036	1-117-813-21	FILM 0.75UF	5.00% 250V	C6031	1-126-942-61	ELECT 1000UF	20.00% 25V
C5037	1-106-351-00	MYLAR 0.0022UF	99% 200V	C6032	1-126-964-11	ELECT 10UF	20.00% 50V
C5038	1-165-319-11	CERAMIC CHIP 0.1UF	50V	C6033	1-163-009-91	CERAMIC CHIP 0.001UF	10.00% 50V
C5039	1-111-230-11	ELECT 1UF	20.00% 160V	C6035	1-136-165-00	FILM 0.1UF	5.00% 50V
C5040	1-136-206-11	MYLAR 0.033UF	5.00% 630V	C6036	1-136-479-11	FILM 0.001UF	5.00% 100V
C5041	1-106-383-00	MYLAR 0.047UF	10.00% 200V	C6037	1-126-967-11	ELECT 47UF	20.00% 50V
C5042	1-161-754-00	CERAMIC 0.001UF	10.00% 2KV	C6042	1-104-665-11	ELECT 100UF	20.00% 25V
C5043	1-162-134-11	CERAMIC 470PF	10.00% 2KV	C6043	1-165-127-11	CERAMIC 470PF	10.00% 500V
C5045	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V	C6045	1-164-004-11	CERAMIC CHIP 0.1UF	10.00% 25V
C5046	1-130-118-00	FILM 0.051UF	5.00% 400V	C6057	1-126-952-11	ELECT 1000UF	20.00% 35V
C5047	1-115-521-11	FILM 0.82UF	5.00% 250V	C6127	1-126-964-11	ELECT 10UF	20.00% 50V
C5048	1-162-134-11	CERAMIC 470PF	10.00% 2KV	C6141	1-126-943-11	ELECT 2200UF	20.00% 25V
C5050	1-107-638-11	ELECT 33UF	20.00% 160V	< CONNECTOR >			
C5052	1-102-212-00	CERAMIC 820PF	10.00% 500V	CN0001	*1-816-976-51	PLUG, CONNECTOR 5P	
C5053	1-137-417-11	MYLAR 0.015UF	10.00% 100V	CN2201	*1-816-975-51	PLUG, CONNECTOR 4P	
C5055	1-127-717-11	FILM 19000PF	3% 1.2KV	CN3003	*1-816-978-51	PLUG, CONNECTOR 7P	
C5070	1-126-961-11	ELECT 2.2UF	20.00% 50V				

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

A

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
CN5001	1-580-798-11	CONNECTOR PIN (DY)		D5012	8-719-302-43	DIODE EL1Z	
CN5008	*1-816-976-51	PLUG, CONNECTOR 5P		D5013	8-719-979-85	DIODE EGP20G	
CN5009	1-695-915-11	TAB (CONTACT)		D5014	8-719-979-85	DIODE EGP20G	
CN5010	*1-816-979-51	PLUG, CONNECTOR 8P		D5034	8-719-302-43	DIODE EL1Z	
CN6001 Δ	*1-580-843-11	PIN, CONNECTOR (POWER)		D5035	8-719-908-03	DIODE GP08D	
CN6002 Δ	1-508-765-00	PIN, CONNECTOR (5MM PITCH) 3P		D5036	6-500-367-01	DIODE BY228RAS20-10	
CN6003 Δ	*1-508-786-00	PIN, CONNECTOR (5MM PITCH) 2P		D5037	8-719-070-62	DIODE PDZ9.1B-115	
CN6004 Δ	1-695-915-11	TAB (CONTACT)		D5038	8-719-908-03	DIODE GP08D	
CN6005 Δ	*1-691-960-11	PIN, CONNECTOR (PC BOARD) 3P		D5039	6-500-565-01	DIODE BYW76-RAS17.5/12	
				D5040	6-500-106-01	DIODE PG4003T/B	
< DIODE >				D5041	1-216-295-91	SHORT CHIP 0	
D0001	8-719-069-55	DIODE UDZSTE-175.6B		D5073	8-719-082-00	DIODE MM3Z4V7T1	
D0002	8-719-069-55	DIODE UDZSTE-175.6B		D6001	8-719-510-53	DIODE D4SB60L	
D0003	8-719-109-69	DIODE RD3.6ESB2		D6002	8-719-911-19	DIODE 1SS119-25	
D0004	8-719-302-45	DIODE SEL1210S-D		D6004	8-719-083-94	DIODE FUF4005	
D0006	8-719-109-89	DIODE RD5.6ESB2		D6008	8-719-063-70	DIODE D1NL20U	
D0007	8-719-069-55	DIODE UDZSTE-175.6B		D6011	8-719-991-33	DIODE 1SS133T-77	
D0008	8-719-074-43	DIODE BAS316-115		D6012	8-719-991-33	DIODE 1SS133T-77	
D0010	8-719-074-43	DIODE BAS316-115		D6013	8-719-911-19	DIODE 1SS119-25	
D0011	8-719-074-43	DIODE BAS316-115		D6018	8-719-312-92	DIODE RK14V1	
D0013	8-719-109-69	DIODE RD3.6ESB2		D6019	8-719-312-92	DIODE RK14V1	
D0014	1-216-295-91	SHORT CHIP 0		D6021	8-719-109-89	DIODE RD5.6ESB2	
D0018	8-719-109-69	DIODE RD3.6ESB2		D6023	8-719-911-19	DIODE 1SS119-25	
D0020	8-719-109-89	DIODE RD5.6ESB2		D6025	6-500-246-01	DIODE FBIU4D7M1-B-4	
D0022	8-719-069-55	DIODE UDZSTE-175.6B		D6033	8-719-109-69	DIODE RD3.6ESB2	
D0404	8-719-109-89	DIODE RD5.6ESB2		D6038	8-719-083-92	DIODE YG802C09RF122	
D0408	8-719-978-33	DIODE DTZ-TT11-6.8B		D6125	8-719-074-43	DIODE BAS316-115	
D0427	8-719-082-01	DIODE MM3Z12VT1		D6126	8-719-074-43	DIODE BAS316-115	
D0442	8-719-082-01	DIODE MM3Z12VT1		< FUSE >			
D1001	6-500-159-01	DIODE MA8330-M-TX		F6001 Δ	1-576-232-21	FUSE (H.B.C.) 5A/250V	
D1007	8-719-069-55	DIODE UDZSTE-175.6B		Δ	1-533-725-11	FUSE HOLDER (F6001)	
D2007	8-719-069-60	DIODE UDZSTE-179.1B		< FERRITE BEAD >			
D2010	8-719-069-55	DIODE UDZSTE-175.6B		FB1000	1-414-760-21	FERRITE 0UH	
D2011	8-719-069-60	DIODE UDZSTE-179.1B		FB2410	1-414-760-21	FERRITE 0UH	
D2012	8-719-914-43	DIODE DAN202K		FB2411	1-414-760-21	FERRITE 0UH	
D2035	8-719-069-55	DIODE UDZSTE-175.6B		FB3053	1-414-760-21	FERRITE 0UH	
D2036	8-719-069-60	DIODE UDZSTE-179.1B		FB3412	1-414-760-21	FERRITE 0UH	
D2204	8-719-069-55	DIODE UDZSTE-175.6B		FB6001	1-469-578-11	FERRITE 1.1UH	
D3005	8-719-929-15	DIODE HZS9.1NB2		FB6002	1-469-578-11	FERRITE 1.1UH	
D3403	8-719-069-55	DIODE UDZSTE-175.6B		FB6003	1-412-911-11	FERRITE 0UH	
D3420	8-719-069-55	DIODE UDZSTE-175.6B		FB6004	1-469-578-11	FERRITE 1.1UH	
D3424	8-719-069-60	DIODE UDZSTE-179.1B		FB6005	1-469-578-11	FERRITE 1.1UH	
D3435	8-719-069-60	DIODE UDZSTE-179.1B		< FILTER >			
D5001	8-719-979-85	DIODE EGP20G		FL2001	1-239-803-11	FILTER, EMI	
D5002	8-719-081-90	DIODE PDZ22B-115					
D5003	8-719-069-55	DIODE UDZSTE-175.6B					
D5004	8-719-074-43	DIODE BAS316-115					
D5005	8-719-081-97	DIODE MMDL914T1					
D5006	6-500-106-01	DIODE PG4003T/B					
D5007	8-719-070-59	DIODE PDZ6.8B-115					

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

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REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
< IC >				L5007	1-412-533-21	INDUCTOR 47UH	
IC0001	6-702-097-02	IC TDA9394H/N1/5/1031		L5032	1-412-553-11	INDUCTOR 3.3MH	
IC0002	8-742-180-30	HYB IC SBX3081-51(30)		L5033	1-406-989-21	INDUCTOR 10MH	
IC0004	8-759-675-65	IC M24C08-WMN6T(A)		L5034	1-216-025-11	RES-CHIP 100 5%	1/10W
IC0401	8-759-665-11	IC LM393DT		L5035	1-419-633-21	INDUCTOR 10MH	
IC2001	6-700-410-02	IC MSP3410G-PP-B8V3		L6001	1-414-183-41	INDUCTOR 10UH	
IC2201	6-703-485-01	IC TDA7496S		L6002	1-414-187-11	INDUCTOR 47UH	
IC5001	8-759-696-71	IC STV9379A		L6003	1-412-531-31	INDUCTOR 33UH	
IC5031	8-759-665-11	IC LM393DT		< PHOTOCOUPLER >			
IC6001	8-759-670-30	IC MCZ3001D		PH6101 Δ	8-749-010-64	PHOTO COUPLER PC123F2	
IC6002	8-749-016-19	IC SE135N-LF4		< PROTECTOR MODULE >			
IC6003	6-702-992-01	IC TA78M08S		PS2201 Δ	1-533-597-31	IC LINK 5A 90V	
IC6004	8-759-648-20	IC L7805CV/LSY		< TRANSISTOR >			
IC6005	8-759-991-41	IC LM78L05ACZ		Q0013	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
IC6008	8-759-591-02	IC L78L33ABZ-AP		Q1102	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
< SOCKET >				Q1103	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
J2200	1-815-325-11	JACK		Q1149	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
J3401	*1-766-296-21	CONNECTOR, DUAL SCART		Q2012	8-729-422-33	TRANSISTOR 2SD601A-Q-TX	
J3402	1-770-329-13	JACK, PIN 3P		Q3401	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
< COIL >				Q3409	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
L0001	1-414-187-11	INDUCTOR 47UH		Q3411	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
L0027	1-216-295-91	SHORT CHIP 0		Q5032	8-729-053-33	TRANSISTOR IRF614-037	
L1001	1-412-534-31	INDUCTOR 56UH		Q5033	6-550-592-01	TRANSISTOR ST2310DHI (027Y)	
L1002	1-408-611-31	INDUCTOR 47UH		Q5035	8-729-053-33	TRANSISTOR IRF614-037	
L1003	1-414-760-21	FERRITE 0UH		Q5070	8-729-901-81	TRANSISTOR 2SC2412K-T-146-R	
L1004	1-414-760-21	FERRITE 0UH		Q6001	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
L1101	1-535-303-00	LEAD, JUMPER (5.0MM)		Q6002	8-729-119-78	TRANSISTOR 2SC2785-HFE	
L1103	1-408-602-31	INDUCTOR 8.2UH		Q6003	8-729-037-17	TRANSISTOR KRA104M-AT	
L2005	1-414-177-11	INDUCTOR 1UH		Q6004	8-729-036-60	TRANSISTOR KRC104M-AT	
L2006	1-535-303-00	LEAD, JUMPER (5.0MM)		Q6006	6-550-591-01	TRANSISTOR 2SK2543 (LBS2SONY)	
L2007	1-414-177-11	INDUCTOR 1UH		Q6007	6-550-591-01	TRANSISTOR 2SK2543 (LBS2SONY)	
L2201	1-535-303-00	LEAD, JUMPER (5.0MM)		Q6008	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
L2203	1-535-303-00	LEAD, JUMPER (5.0MM)		Q6009	8-729-026-49	TRANSISTOR 2SA1037AK-T146-R	
L2401	1-414-760-21	FERRITE 0UH		< RESISTOR >			
L2405	1-535-303-00	LEAD, JUMPER (5.0MM)		JR10	1-216-295-91	SHORT CHIP 0	
L2406	1-535-303-00	LEAD, JUMPER (5.0MM)		JR2004	1-216-296-11	SHORT CHIP 0	
L2410	1-216-025-11	RES-CHIP 100 5%	1/10W	JR2006	1-216-295-91	SHORT CHIP 0	
L2446	1-410-993-42	INDUCTOR 1UH		JR2009	1-216-295-91	SHORT CHIP 0	
L2448	1-410-993-42	INDUCTOR 1UH		JR2010	1-216-295-91	SHORT CHIP 0	
L3004	1-414-187-11	INDUCTOR 47UH		JR2011	1-216-296-11	SHORT CHIP 0	
L3006	1-414-187-11	INDUCTOR 47UH		JR2401	1-216-295-91	SHORT CHIP 0	
L3430	1-414-760-21	FERRITE 0UH		JR3004	1-216-295-91	SHORT CHIP 0	
L5001	1-414-187-11	INDUCTOR 47UH		JR3007	1-216-295-91	SHORT CHIP 0	
L5002	1-412-529-11	INDUCTOR 22UH		JR3021	1-216-818-11	METAL CHIP 560 5%	1/10W
L5003	1-412-521-31	INDUCTOR 4.7UH		JR3024	1-216-295-91	SHORT CHIP 0	
L5004	1-535-303-00	LEAD, JUMPER (5.0MM)					
L5005	1-412-542-41	INDUCTOR 270UH					

REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK		
JR3025	1-216-295-91	SHORT CHIP	0			R0431	1-216-073-91	RES-CHIP	10K	5%	1/10W
JR3419	1-216-022-00	RES-CHIP	75	5%	1/10W	R0433	1-216-073-91	RES-CHIP	10K	5%	1/10W
JR5008	1-216-295-91	SHORT CHIP	0			R0434	1-216-073-91	RES-CHIP	10K	5%	1/10W
JR6001	1-216-295-91	SHORT CHIP	0			R0442	1-216-085-91	RES-CHIP	33K	5%	1/10W
JR6009	1-216-295-91	SHORT CHIP	0			R0443	1-216-073-91	RES-CHIP	10K	5%	1/10W
JR6010	1-216-295-91	SHORT CHIP	0			R1001	1-216-093-91	RES-CHIP	68K	5%	1/10W
R0003	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R1002	1-216-097-11	RES-CHIP	100K	5%	1/10W
R0004	1-216-033-00	RES-CHIP	220	5%	1/10W	R1003	1-216-061-91	RES-CHIP	3.3K	5%	1/10W
R0005	1-216-041-00	RES-CHIP	470	5%	1/10W	R1005	1-414-760-21	FERRITE	0UH		
R0014	1-216-069-00	RES-CHIP	6.8K	5%	1/10W	R1006	1-215-900-11	METAL OXIDE	22K	5%	2W
R0023	1-216-035-00	RES-CHIP	270	5%	1/10W	R1007	1-216-025-11	RES-CHIP	100	5%	1/10W
R0025	1-216-025-11	RES-CHIP	100	5%	1/10W	R1008	1-216-025-11	RES-CHIP	100	5%	1/10W
R0026	1-216-025-11	RES-CHIP	100	5%	1/10W	R1111	1-216-081-00	RES-CHIP	22K	5%	1/10W
R0027	1-216-025-11	RES-CHIP	100	5%	1/10W	R1112	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R0028	1-216-025-11	RES-CHIP	100	5%	1/10W	R1113	1-216-081-00	RES-CHIP	22K	5%	1/10W
R0029	1-216-061-91	RES-CHIP	3.3K	5%	1/10W	R1114	1-216-295-91	SHORT CHIP	0		
R0030	1-216-821-11	METAL CHIP	1K	5%	1/10W	R1115	1-216-037-00	RES-CHIP	330	5%	1/10W
R0031	1-216-061-91	RES-CHIP	3.3K	5%	1/10W	R1117	1-216-073-91	RES-CHIP	10K	5%	1/10W
R0032	1-216-061-91	RES-CHIP	3.3K	5%	1/10W	R1120	1-216-017-91	RES-CHIP	47	5%	1/10W
R0033	1-216-073-91	RES-CHIP	10K	5%	1/10W	R1121	1-216-190-00	RES-CHIP	470	5%	1/8W
R0041	1-216-025-11	RES-CHIP	100	5%	1/10W	R1124	1-216-025-11	RES-CHIP	100	5%	1/10W
R0042	1-216-025-11	RES-CHIP	100	5%	1/10W	R1149	1-216-049-11	RES-CHIP	1K	5%	1/10W
R0044	1-216-073-91	RES-CHIP	10K	5%	1/10W	R1153	1-216-077-91	RES-CHIP	15K	5%	1/10W
R0046	1-216-025-11	RES-CHIP	100	5%	1/10W	R2001	1-216-025-11	RES-CHIP	100	5%	1/10W
R0047	1-216-025-11	RES-CHIP	100	5%	1/10W	R2002	1-216-085-91	RES-CHIP	33K	5%	1/10W
R0048	1-216-073-91	RES-CHIP	10K	5%	1/10W	R2003	1-216-025-11	RES-CHIP	100	5%	1/10W
R0050	1-216-025-11	RES-CHIP	100	5%	1/10W	R2016	1-216-097-11	RES-CHIP	100K	5%	1/10W
R0056	1-216-081-00	RES-CHIP	22K	5%	1/10W	R2032	1-216-025-11	RES-CHIP	100	5%	1/10W
R0060	1-216-025-11	RES-CHIP	100	5%	1/10W	R2033	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R0061	1-216-025-11	RES-CHIP	100	5%	1/10W	R2034	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R0062	1-216-077-91	RES-CHIP	15K	5%	1/10W	R2035	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R0063	1-216-061-91	RES-CHIP	3.3K	5%	1/10W	R2036	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R0064	1-216-069-00	RES-CHIP	6.8K	5%	1/10W	R2038	1-216-025-11	RES-CHIP	100	5%	1/10W
R0066	1-216-053-00	RES-CHIP	1.5K	5%	1/10W	R2046	1-260-107-11	CARBON	4.7K	5%	1/2W
R0067	1-216-073-91	RES-CHIP	10K	5%	1/10W	R2048	1-249-429-11	CARBON	10K	5%	1/4W
R0070	1-216-025-11	RES-CHIP	100	5%	1/10W	R2049	1-216-097-11	RES-CHIP	100K	5%	1/10W
R0071	1-216-049-11	RES-CHIP	1K	5%	1/10W	R2050	1-216-081-00	RES-CHIP	22K	5%	1/10W
R0074	1-216-073-91	RES-CHIP	10K	5%	1/10W	R2051	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R0090	1-216-057-00	RES-CHIP	2.2K	5%	1/10W	R2052	1-216-069-00	RES-CHIP	6.8K	5%	1/10W
R0092	1-216-073-91	RES-CHIP	10K	5%	1/10W	R2200	1-260-093-11	CARBON	330	5%	1/2W
R0094	1-216-025-11	RES-CHIP	100	5%	1/10W	R2201	1-260-093-11	CARBON	330	5%	1/2W
R0095	1-216-065-91	RES-CHIP	4.7K	5%	1/10W	R2207	1-216-077-91	RES-CHIP	15K	5%	1/10W
R0096	1-216-073-91	RES-CHIP	10K	5%	1/10W	R2210	1-216-077-91	RES-CHIP	15K	5%	1/10W
R0420	1-216-073-91	RES-CHIP	10K	5%	1/10W	R2213	1-216-049-11	RES-CHIP	1K	5%	1/10W
R0425	1-216-085-91	RES-CHIP	33K	5%	1/10W	R2401	1-414-760-21	FERRITE	0UH		
R0426	1-216-073-91	RES-CHIP	10K	5%	1/10W	R2402	1-216-041-00	RES-CHIP	470	5%	1/10W
R0428	1-216-073-91	RES-CHIP	10K	5%	1/10W	R2403	1-216-113-00	RES-CHIP	470K	5%	1/10W
R0429	1-216-089-91	RES-CHIP	47K	5%	1/10W	R2404	1-216-113-00	RES-CHIP	470K	5%	1/10W
R0430	1-216-073-91	RES-CHIP	10K	5%	1/10W	R2405	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
						R2406	1-216-296-11	SHORT CHIP	0		

REF.NO.	PART.NO	DESCRIPTION	REMARK			REF.NO.	PART.NO	DESCRIPTION	REMARK		
R2413	1-216-113-00	RES-CHIP	470K	5%	1/10W	R5008	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W
R2416	1-216-027-00	RES-CHIP	120	5%	1/10W	R5009	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W
R2417	1-216-113-00	RES-CHIP	470K	5%	1/10W	R5010	1-216-113-00	RES-CHIP	470K	5%	1/10W
R2418	1-216-113-00	RES-CHIP	470K	5%	1/10W	R5012	1-249-382-11	CARBON	1.2	5%	1/4W
R2422	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	R5013	1-216-097-11	RES-CHIP	100K	5%	1/10W
R2423	1-216-113-00	RES-CHIP	470K	5%	1/10W	R5014	1-249-377-11	CARBON	0.47	5%	1/4W
R2424	1-216-113-00	RES-CHIP	470K	5%	1/10W	R5015	1-249-377-11	CARBON	0.47	5%	1/4W
R2427	1-216-113-00	RES-CHIP	470K	5%	1/10W	R5016	1-214-907-00	METAL	56K	1%	1/2W
R2446	1-216-113-00	RES-CHIP	470K	5%	1/10W	R5017	1-215-447-00	METAL	12K	1%	1/4W
R2447	1-216-295-91	SHORT CHIP	0			R5018	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R2448	1-216-113-00	RES-CHIP	470K	5%	1/10W	R5020	1-215-884-11	METAL OXIDE	47	5%	2W
R2449	1-216-295-91	SHORT CHIP	0			R5021	1-216-103-00	RES-CHIP	180K	5%	1/10W
R2450	1-216-041-00	RES-CHIP	470	5%	1/10W	R5022	1-216-097-11	RES-CHIP	100K	5%	1/10W
R2451	1-216-041-00	RES-CHIP	470	5%	1/10W	R5023	1-216-117-00	RES-CHIP	680K	5%	1/10W
R3010	1-216-049-11	RES-CHIP	1K	5%	1/10W	R5024	1-216-077-91	RES-CHIP	15K	5%	1/10W
R3011	1-216-295-91	SHORT CHIP	0			R5025	1-216-049-11	RES-CHIP	1K	5%	1/10W
R3018	1-208-820-11	METAL CHIP	39K	0.5%	1/10W	R5026	1-216-089-91	RES-CHIP	47K	5%	1/10W
R3020	1-216-077-91	RES-CHIP	15K	5%	1/10W	R5027	1-216-075-00	RES-CHIP	12K	5%	1/10W
R3051	1-414-760-21	FERRITE	0UH			R5028	1-216-097-11	RES-CHIP	100K	5%	1/10W
R3072	1-216-295-91	SHORT CHIP	0			R5029	1-216-073-91	RES-CHIP	10K	5%	1/10W
R3407	1-216-022-00	RES-CHIP	75	5%	1/10W	R5030	1-216-085-91	RES-CHIP	33K	5%	1/10W
R3408	1-216-022-00	RES-CHIP	75	5%	1/10W	R5031	1-216-057-00	RES-CHIP	2.2K	5%	1/10W
R3409	1-216-025-11	RES-CHIP	100	5%	1/10W	R5032	1-216-059-00	RES-CHIP	2.7K	5%	1/10W
R3410	1-216-025-11	RES-CHIP	100	5%	1/10W	R5033	1-216-081-00	RES-CHIP	22K	5%	1/10W
R3411	1-216-022-00	RES-CHIP	75	5%	1/10W	R5034	1-216-111-00	RES-CHIP	390K	5%	1/10W
R3412	1-216-025-11	RES-CHIP	100	5%	1/10W	R5035	1-216-093-91	RES-CHIP	68K	5%	1/10W
R3414	1-216-022-00	RES-CHIP	75	5%	1/10W	R5036	1-216-025-11	RES-CHIP	100	5%	1/10W
R3415	1-216-022-00	RES-CHIP	75	5%	1/10W	R5038	1-535-143-71	LEAD, JUMPER (7.5MM)			
R3419	1-216-022-00	RES-CHIP	75	5%	1/10W	R5039	1-215-892-81	METAL OXIDE	1K	5%	2W
R3421	1-216-049-11	RES-CHIP	1K	5%	1/10W	R5040	1-212-970-00	FUSIBLE	33	5%	1/2W
R3435	1-216-295-91	SHORT CHIP	0			R5041	1-216-109-00	RES-CHIP	330K	5%	1/10W
R3438	1-216-022-00	RES-CHIP	75	5%	1/10W	R5042	1-216-121-11	RES-CHIP	1M	5%	1/10W
R3439	1-216-022-00	RES-CHIP	75	5%	1/10W	R5043	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R3440	1-216-049-11	RES-CHIP	1K	5%	1/10W	R5044	1-216-103-00	RES-CHIP	180K	5%	1/10W
R3441	1-216-051-00	RES-CHIP	1.2K	5%	1/10W	R5046	1-216-479-11	METAL OXIDE	560	5%	3W
R3444	1-216-061-91	RES-CHIP	3.3K	5%	1/10W	R5047	1-535-143-71	LEAD, JUMPER (7.5MM)			
R3453	1-216-171-00	RES-CHIP	75	5%	1/8W	R5048	1-249-387-11	CARBON	3.3	5%	1/4W
R3454	1-216-001-00	RES-CHIP	10	5%	1/10W	R5049	1-216-364-21	METAL OXIDE	0.39	5%	2W
R3455	1-412-002-31	INDUCTOR	4.7UH			R5050	1-215-880-00	METAL OXIDE	10	5%	2W
R3460	1-216-049-11	RES-CHIP	1K	5%	1/10W	R5051	1-215-867-00	METAL OXIDE	470	5%	1W
R3461	1-216-022-00	RES-CHIP	75	5%	1/10W	R5052	1-216-848-11	METAL CHIP	180K	5%	1/10W
R3462	1-216-178-00	RES-CHIP	150	5%	1/8W	R5053	1-249-381-11	CARBON	1	5%	1/4W
R5000	1-216-061-91	RES-CHIP	3.3K	5%	1/10W	R5055	1-216-089-91	RES-CHIP	47K	5%	1/10W
R5001	1-216-091-00	RES-CHIP	56K	5%	1/10W	R5056	1-215-915-11	METAL OXIDE	470	5%	3W
R5002	1-216-073-91	RES-CHIP	10K	5%	1/10W	R5057	1-216-065-91	RES-CHIP	4.7K	5%	1/10W
R5003	1-215-888-00	METAL OXIDE	220	5%	2W	R5061	1-216-117-00	RES-CHIP	680K	5%	1/10W
R5004	1-249-385-11	CARBON	2.2	5%	1/4W	R5062	1-216-099-00	RES-CHIP	120K	5%	1/10W
R5005	1-216-667-11	METAL CHIP	4.7K	0.5%	1/10W	R5063	1-216-097-11	RES-CHIP	100K	5%	1/10W
R5006	1-216-665-11	METAL CHIP	3.9K	0.5%	1/10W	R5065	1-216-033-00	RES-CHIP	220	5%	1/10W
R5007	1-216-349-00	METAL OXIDE	1	5%	1W	R5068	1-215-915-11	METAL OXIDE	470	5%	3W

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

A

REF.NO.	PART.NO	DESCRIPTION	REMARK	REF.NO.	PART.NO	DESCRIPTION	REMARK
R5069	1-216-073-91	RES-CHIP	10K 5% 1/10W	R6042	1-249-405-11	CARBON	100 5% 1/4W
R5070	1-216-049-11	RES-CHIP	1K 5% 1/10W	R6043	1-216-089-91	RES-CHIP	47K 5% 1/10W
R5071	1-216-035-00	RES-CHIP	270 5% 1/10W	R6045	1-216-073-91	RES-CHIP	10K 5% 1/10W
R5072	1-216-039-00	RES-CHIP	390 5% 1/10W	R6047	1-216-049-11	RES-CHIP	1K 5% 1/10W
R5083	1-216-081-00	RES-CHIP	22K 5% 1/10W	R6048	1-215-481-00	METAL	330K 1% 1/4W
R5089	1-216-295-91	SHORT CHIP	0	R6049	1-208-805-11	METAL CHIP	9.1K 0.5% 1/10W
R5091	1-215-892-11	METAL OXIDE	1K 5% 2W	R6050	1-208-758-11	METAL CHIP	100 0.5% 1/10W
R5095	1-249-377-11	CARBON	0.47 5% 1/4W	R6051 Δ	1-220-926-11	FUSIBLE	0.47 10% 1/2W
R5112	1-216-121-11	RES-CHIP	1M 5% 1/10W	R6054	1-216-001-00	RES-CHIP	10 5% 1/10W
R5117	1-216-025-11	RES-CHIP	100 5% 1/10W	R6056	1-216-365-00	METAL OXIDE	0.47 5% 2W
R5122	1-216-089-91	RES-CHIP	47K 5% 1/10W	R6140	1-249-397-11	CARBON	22 5% 1/4W
R5134	1-216-119-00	RES-CHIP	820K 5% 1/10W	R7106	1-216-025-11	RES-CHIP	100 5% 1/10W
R5135	1-216-101-00	RES-CHIP	150K 5% 1/10W	R7107	1-216-025-11	RES-CHIP	100 5% 1/10W
R5136	1-216-073-91	RES-CHIP	10K 5% 1/10W	R7108	1-216-025-11	RES-CHIP	100 5% 1/10W
R5139	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	R7109	1-216-049-11	RES-CHIP	1K 5% 1/10W
R5140	1-216-033-00	RES-CHIP	220 5% 1/10W	< RELAY >			
R5145	1-216-025-11	RES-CHIP	100 5% 1/10W	RY6001 Δ	1-755-388-11	RELAY (AC POWER)	
R5155	1-216-025-11	RES-CHIP	100 5% 1/10W	< SWITCH >			
R6000	1-216-037-00	RES-CHIP	330 5% 1/10W	S0001	1-692-431-21	SWITCH, TACTILE	
R6001	1-216-645-11	METAL CHIP	560 0.5% 1/10W	S0002	1-692-431-21	SWITCH, TACTILE	
R6003 Δ	1-202-933-61	FUSIBLE	0.1 10% 1/2W	S0003	1-692-431-21	SWITCH, TACTILE	
R6004	1-216-053-00	RES-CHIP	1.5K 5% 1/10W	S0004	1-692-431-21	SWITCH, TACTILE	
R6005	1-216-049-11	RES-CHIP	1K 5% 1/10W	S0005	1-692-431-21	SWITCH, TACTILE	
R6006 Δ	1-202-719-00	SOLID	1M 10% 1/2W	S0006	1-692-431-21	SWITCH, TACTILE	
R6008	1-216-073-91	RES-CHIP	10K 5% 1/10W	S6001 Δ	1-571-433-21	SWITCH, PUSH (AC POWER)	
R6009	1-216-677-11	METAL CHIP	12K 0.5% 1/10W	SW5032	1-572-707-11	SWITCH, LEVER	
R6010	1-215-481-00	METAL	330K 1% 1/4W	< TRANSFORMER >			
R6011	1-216-059-00	RES-CHIP	2.7K 5% 1/10W	T5011 Δ	1-453-372-21	TRANSFORMER ASSY, FLYBACK (NX-4521//Z214)	
R6012	1-249-429-11	CARBON	10K 5% 1/4W	T5031	1-437-210-11	TRANSFORMER, HORIZONTAL DRIVE	
R6013 Δ	1-219-720-91	METAL	10M 5% 1W	T5032	1-426-981-91	TRANSFORMER, FERRITE (PMT)	
R6014	1-216-053-00	RES-CHIP	1.5K 5% 1/10W	T5033	1-435-346-11	TRANSFORMER, HORIZONTAL LINEAR	
R6015	1-215-385-00	METAL	33 1% 1/4W	T6001 Δ	1-428-896-11	COIL, LINE FILTER	
R6016	1-216-101-00	RES-CHIP	150K 5% 1/10W	T6003 Δ	1-435-977-11	TRANSFORMER, CONVERTER (PIT)	
R6017	1-216-099-00	RES-CHIP	120K 5% 1/10W	T6102 Δ	1-437-483-11	TRANSFORMER, STANDBY	
R6019	1-216-049-11	RES-CHIP	1K 5% 1/10W	< THERMISTOR >			
R6021	1-216-113-00	RES-CHIP	470K 5% 1/10W	TH6001 Δ	1-803-951-11	THERMISTOR, PTC	
R6022	1-216-073-91	RES-CHIP	10K 5% 1/10W	< VARISTOR >			
R6023	1-216-065-91	RES-CHIP	4.7K 5% 1/10W	VD6001 Δ	1-804-995-11	VARISTOR	
R6024	1-216-001-00	RES-CHIP	10 5% 1/10W	< CRYSTAL >			
R6025	1-216-073-91	RES-CHIP	10K 5% 1/10W	X0001	1-578-774-71	VIBRATOR, CRYSTAL	
R6029	1-216-073-91	RES-CHIP	10K 5% 1/10W	X2001	1-760-628-11	VIBRATOR, CRYSTAL	
R6032	1-249-417-11	CARBON	1K 5% 1/4W				
R6033	1-215-481-00	METAL	330K 1% 1/4W				
R6034	1-217-625-00	METAL	0.05 10% 2W				
R6035	1-260-300-11	CARBON	4.7 5% 1/2W				
R6036	1-249-413-11	CARBON	470 5% 1/4W				
R6037	1-216-041-00	RES-CHIP	470 5% 1/10W				
R6039	1-208-814-91	METAL CHIP	22K 0.5% 1/10W				
R6040	1-208-830-11	METAL CHIP	100K 0.5% 1/10W				
R6041	1-216-097-11	RES-CHIP	100K 5% 1/10W				

Note : The components identified by shading and marked Δ are critical for safety. Replace only with the part numbers specified in the parts list.

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REF.NO.	PART.NO	DESCRIPTION	REMARK
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A Board, Variant Parts KV-29CL10B

< TUNER >

TU1001	8-598-535-20	FRONTEND BTF-EF411	
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A Board, Variant Parts KV-29CL10E/KV-29CL10K

< TUNER >

TU1001	8-598-533-10	FRONTEND BTF-EC411	
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A Board, Variant Parts KV-29CL10U

< TUNER >

TU1001	8-598-529-10	FRONTEND BTF-EU611	
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REF.NO.	PART.NO	DESCRIPTION	REMARK
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MISCELLANEOUS

Δ	1-571-433-21	SWITCH, PUSH (AC POWER)	
Δ	1-424-733-11	COIL, PFC CHOKE 65MMH	
Δ	1-823-715-11	CORD, POWER (KV-29CL10B/29CL10E/29CL10K)	
Δ	1-776-860-11	POWER CORD, FILTER (UK) (KV-29CL10U)	
Δ	1-453-372-21	TRANSFORMER ASSY, FLYBACK (NX4521//Z214)	

8-598-535-20	FRONTEND BTF-EF411 (KV-29CL10B)
8-598-533-10	FRONTEND BTF-EC411 (KV-29CL10E/29CL10K)
8-598-529-10	FRONTEND BTF-EU611 (KV-29CL10U)
1-529-988-11	SPEAKER (4.2X24CM)

Δ	8-735-097-05	PICTURE TUBE (M68LNH060X)
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Δ	8-451-494-51	DEFLECTION YOKE (Y29RSA-L)
1-452-896-11	COIL, NA ROTATION (RT200)	
Δ	8-453-011-11	NECK ASSY NA299-M
Δ	1-416-654-21	COIL, DEMAGNETIC
Δ	1-251-946-21	CAP ASSY, HIGH-VOLTAGE

1-452-094-00	MAGNET, ROTATABLE DISK; 15MM \varnothing
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1-452-032-00	MAGNET, DISK; 10MM \varnothing
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ACCESSORIES AND PACKAGING MATERIALS

*4-029-168-01	BAG, PROTECTION
*4-093-666-01	CUSHION LOWER
*4-093-665-01	CUSHION UPPER
*4-093-664-01	CARTON, INDIVIDUAL
4-093-786-41	MANUAL, INSTRUCTION (KV-29CL10B) (GERMAN/FRENCH/ITALIAN/DUTCH)
4-093-786-51	MANUAL, INSTRUCTION (KV-29CL10B) (ENGLISH)
4-093-786-11	MANUAL, INSTRUCTION (KV-29CL10E) (GERMAN/GREEK/TURKISH)
4-093-786-21	MANUAL, INSTRUCTION (KV-29CL10E) (ITALIAN)
4-093-786-31	MANUAL, INSTRUCTION (KV-29CL10E) (SPANISH/PORTUGUESE/DANISH/FINNISH/ NORWEGIAN/SWEDISH)
4-093-786-61	MANUAL, INSTRUCTION (KV-29CL10K) (ENGLISH/ BULGARIAN/CZECH/HUNGARIAN/POLISH/RUSSIAN)
4-093-786-71	MANUAL, INSTRUCTION (KV-29CL10U) (ENGLISH)

REMOTE COMMANDER

1-477-789-11	COMMANDER STANDARD (RM-946)
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TRACE

A new TV Repair Assistance Tool that combines ease of use and powerful PC software tools to allow you to save valuable time during many TV repairs.



The TRACE interface connects to the PC's serial port. It provides connection to the TV's I²C bus and can be provided with an InfraRed transmitter (optional).

The interface is powered by a standard 9 V PP3 battery for portable use, and can also be powered by an external 9V/25mA DC power supply.

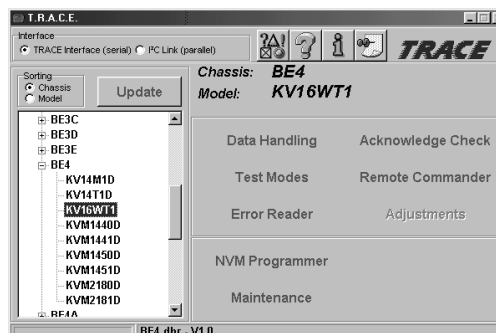
The TRACE software that is supplied with the interface allows you to:

- Read, restore and compare NVM contents via the I²C bus
- Acknowledge check of all I²C devices in the TV set
- Read Error Codes (emulation of the Error Reader tool)

With the optional IR Add-on kit, the following features can be added:

- Remote Commander emulation
- User programmable Functional Check through Infrared
- Fast and documented Test Mode setting of all Sony TV chassis

Additional features such as Adjustments and Troubleshooting are available in chassis-dependent software modules. Please contact your local Sony Service organisation for the latest information.



Note: For workshops already using the existing I²C Link parallel port interface (9-948-320-30), this software can be used as well, replacing the TV Data Handling software (9-948-340-50), but Error Reader and IR functions can only be accessed with the TRACE interface.

Partnumbers:	TRACE Starter Kit (TRACE interface + software):	9-948-320-70
	TRACE Software (for users of the I ² C Link interface):	9-948-340-80
	TRACE IR Add-on (IR interface + Remote Commander software):	9-948-320-80

PC requirements: IBM-compatible PC with operating system Windows95, Windows98, or WindowsNT*.

* WindowsNT only supported with TRACE interface

Sony Corporation
Sony UK
Service Promotions Dept.

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